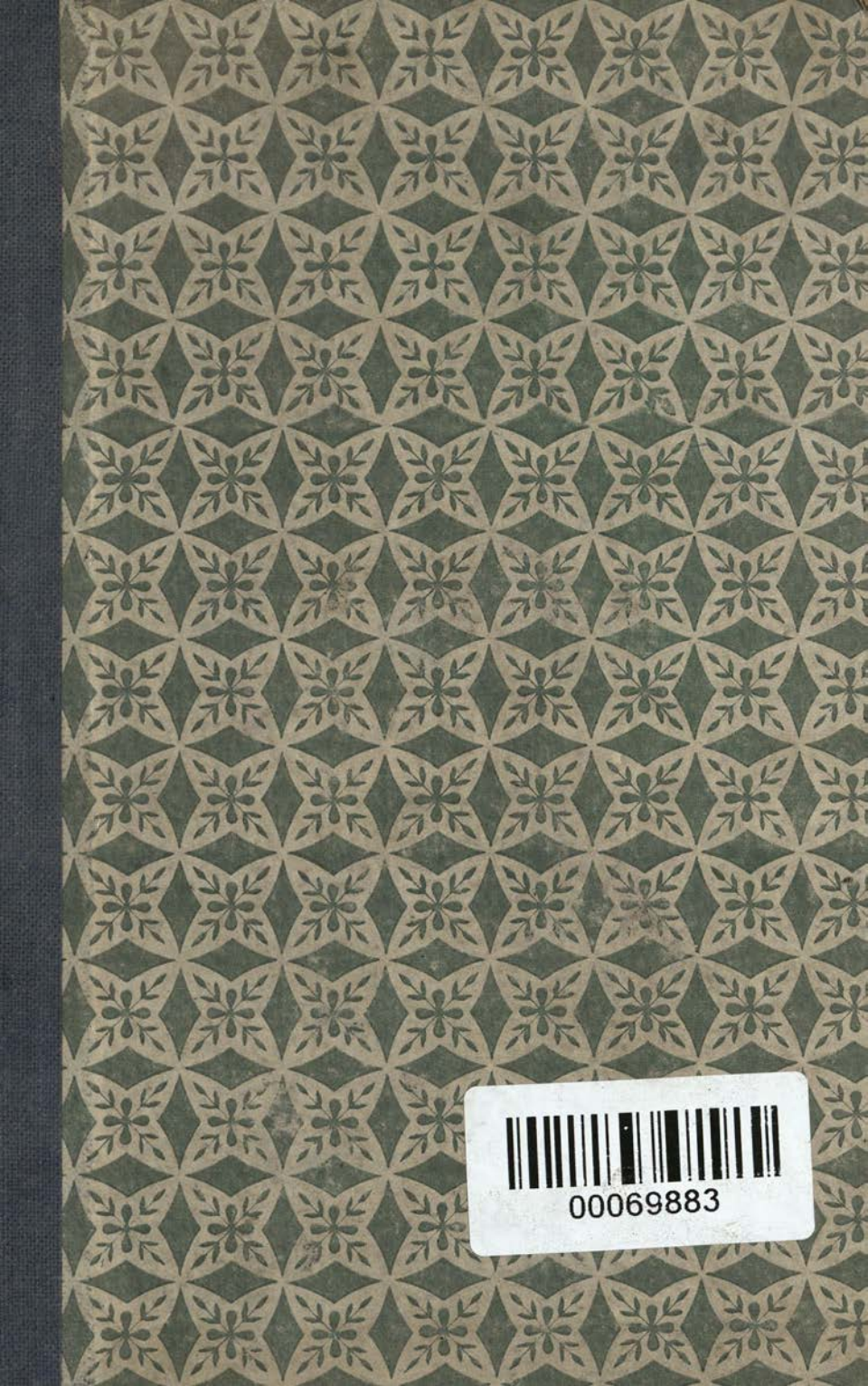
00069883

THE
ASIATIC SOCIETY OF BOMBAY
TOWN HALL, BOMBAY-400 023.

Digitized with financial assistance from
Dr. Gersan Da Cunha
on 19 February, 2019

MATERIA INDICA;

OR,

SOME ACCOUNT

OF

THOSE ARTICLES WHICH ARE EMPLOYED BY

THE HINDOOS,

AND OTHER EASTERN NATIONS,

IN THEIR

MEDICINE, ARTS, AND AGRICULTURE;

COMPRISING ALSO

FORMULÆ,

WITH PRACTICAL OBSERVATIONS,

NAMES OF DISEASES IN VARIOUS EASTERN LANGUAGES,
AND A COPIOUS LIST OF ORIENTAL BOOKS IMMEDIATELY
CONNECTED WITH GENERAL SCIENCE,
&c. &c.

69883

By WHITELAW AINSLIE, M.D. M.R.A.S.
LATE OF THE MEDICAL STAFF OF SOUTHERN INDIA.

VOL. I.

LONDON:
PRINTED FOR
LONGMAN, REES, ORME, BROWN, AND GREEN,
PATERNOSTER-ROW.
1826.

Gd
510
Ain/ Mat
69883

00069883

TO

HIS MOST GRACIOUS MAJESTY,

THE KING,

THIS WORK

IS,

WITH PERMISSION, DEDICATED,

BY

HIS MAJESTY'S

MOST FAITHFUL, MOST DEVOTED,

AND MOST OBEDIENT

SERVANT AND SUBJECT,

WHITELAW AINSLIE.

CONTENTS

OF

THE FIRST VOLUME.

Page

PREFACE.

A Table shewing the Orthography that has been adopted xii
Weights and Measures - - - - - - - xiii
Forms of Prescription - - - - - - - xvii
Explanation of the Abbreviations - - - - xviii
Postscript - - - - - - - - - xix

CHAP. I.

Articles of the British Materia Medica found in India and other Eastern countries. — Their use amongst the native inhabitants, including also some articles of diet for the sick - - - - - - - - - - - - 1

CHAP. II.

Metals and Metallic Substances found in India and other Eastern countries - - - - - - - - 495

CHAP. III.

Formulæ, with practical Observations - - - - 579

PREFACE.

This publication is, properly speaking, the second edition of that which was printed in India, in 1813, under the title of "Materia Medica of Hindoostan, and Artisans' and Agriculturists' Nomenclature;" but as much new, and, I trust, interesting matter has been obtained since that time, in the various branches treated of, I have thought it advisable to give the book a somewhat more comprehensive appellation.

The very flattering manner in which the Madras edition was received by all the high authorities in India, the general utility of which it was found in that country, the subsequent approbation it met with from the Honourable the Court of Directors, and the numerous applications that have been made for it since out of print, have induced me to lay before the public this enlarged, and, I hope, much improved work.

It had long been a source of regret that there was no where to be procured a correct list of the different articles employed by the natives of Hindoostan in their arts and manufactures, nor any sufficiently full and detailed account of their medicines. It was with a view of remedying these evils in some measure that the treatise was originally undertaken.

In adopting another name for it, I have, at the same

time, deemed it proper to change the arrangement, and have divided it into distinct parts: the first of these comprehends such of *our* drugs as are found in India and other Eastern territories: in it I have attempted to give some account of their different uses amongst the inhabitants of those regions, and have also noticed several articles of diet as the most proper for the sick and delicate. In fact, it has been my study, to the best of my ability, to supply what has long been wanted, a kind of combining link betwixt the Materia Medica of Europe and that of Asia. Of the other parts of the work I shall say but little here, as each will have its appropriate Preface: thus much, however, I may observe, that in Volume II. will be seen a description of those medicines which are almost exclusively employed by the Hindoos and other Oriental nations; and that the remainder of the Materia Indica will be found to treat of such articles as are used by them in their arts and manufactures; and also of those vegetables which are cultivated as food, and which will be observed to embrace a very numerous list; the natural consequence of this circumstance, that as a large proportion of the natives of India are prohibited by their religion from eating animal food, they have naturally been led to seek for a luxurious variety from another kingdom.

That the volumes now with great diffidence laid before the British public have many defects I am but too well convinced: that they contain matter which may be considered as new in the mother country will not, perhaps, be denied: that they are the result of long and patient investigation I myself

feel. The path which I pursued was no beaten track, but winding, and often scarcely to be traced; overgrown with innumerable useless and noisome weeds, yet occasionally adorned by flowers of rare beauty, and others possessing still more valuable qualities. If I have been so fortunate as to cull a few that may ultimately prove of real utility to mankind, I shall regret neither the time nor the labour that I have bestowed in the search; and may then, too, be excused for having dragged into public notice some of Nature's fairest offerings, with little to recommend them, but "a brilliant aspect and an empty name."

As might naturally be supposed, several of the drugs mentioned in Vol. I. cannot be found in any of the provinces of India in such quantities as to preclude the necessity of regular supplies from established stores; nor are they always to be met with of the best quality; yet it must be gratifying to know what those medicines are that can be procured in the bazars, or gardens of the wealthy inhabitants, in cases of extremity.

The Sanscrit names for many articles are so numerous (synonyms), that there has been some difficulty in selecting; a circumstance which it is necessary to mention, as the reader no doubt will occasionally find amongst them appellations that are not familiar to him; and it is also to be observed, that, as in the wide range of territory in which the different languages are spoken, there cannot fail to be a variety of terms and dialects, the reader must expect, now and then, to meet with spellings and termi-

nations which he is perhaps not accustomed to. For such peculiarities there is no remedy. The Tamool and Tellingoo adopted, are those of the most learned Hindoos of the Southern provinces of India; Brahmins from the pagodas of Madura, Seringham, and Tanjore.

A TABLE SHEWING THE ORTHOGRAPHY THAT HAS BEEN ADOPTED IN THIS WORK, IN CONVEYING THE SOUND OF THE ORIENTAL WORDS IN THE ENGLISH CHARACTER: —

ā, as in the English word *call*, or French word *baton*.

a, as in the English word *man*.

āi, as the letters *aw-ye* in the phrase *saw ye?* pronounced quick.

ay, as the letters *ay* in the words *day* and *may*.

ĕ, or *é* accented thus, as the first *e* in the word *elate*, or as *e* in the French word *cès*.

ee, as *ee* in the word *bee*.

ēi, as the letters *ay ye* in the English phrase *say ye?* pronounced quick.

g, as *g* in the English word *good*, or French word *grand*.

gh, as *gh* in the English word *ghostly*.

ie, as *ea* in the English word *sea*, or *ie* in the French word *colonie*.

j, as *j* in the English word *join*.

oo, as *oo* in the English word *moon*, or *ou* in the French word *loup*.

u, as *u* in the English words *mud* and *sun*.

y, as *y* in the English word *my*, or as *ei* in the German word *schein* (bright).

o, as *o* in the English word *bold*, or as *eau* in the French word *beau*, or *au* in *mauvais*.

i, as *i* in the English word *if*, or in the French word *si*.

c and *k*, indiscriminately, as *k* in the English word *keep*, or *c* in the English word *cold*.

ch, as *ch* in the English word *charm*.

sh, as *sh* in the English word *shame*, or as *ch* in the French word *chapeau*.

ow, as *ow* in the English word *cow*.

ou, as *ou* in the English word *doubt*.

When *p* precedes *h*, the *h* is then to be slightly aspirated, as in the word *phóol* (a flower, in Dukhanie), pronounced *p-hool*: in like manner, *h* following any other consonant is to be slightly aspirated.

This mark (´), so slanting, over a vowel, or this (˘), denote that it must be pronounced quick; but when thus (¯), straight or horizontal, over a vowel, it denotes that it is to be pronounced full and broad, as *ā* in *war*.

N. B. In representing Sanscrit words in Roman letters, *u* and *ū*, *i* and *ī*, are to be pronounced as by the Italians, according to Sir W. Jones' system of orthography.

WEIGHTS AND MEASURES.

The following account of the weights and measures in use in the peninsula of India is almost entirely taken from Dr. Heyne's "Statistical Tracts on India."

The weights or dry measures in India are of two different kinds, both defined very accurately. The former is called the *bazar weight*, and is used in the sale of what are termed bazar articles; such as tamarinds, turmeric, and *all sorts of drugs.* The latter is used *for grain*, both in the bazars and all revenue transactions. The great difficulty lies in the multiplicity of weights employed in different districts; for almost every principal town or small district has weights and measures differing widely from all those of the neighbourhood.

The general and uniform measure and weight is the *pucca seer*, which is properly understood to consist of *sixty-four dubs*, that is, supposing each dub to weigh four drachms; but sometimes the dubs are lighter than that, in which case more dubs are added to make up the seer. This measure appears in some writings of very old date, for instance, in the *Sudra Ganitam.*

Both fluids and dry articles are determined by weight, with the exception of oil, for the sale of which a kind of graduated measure is employed. The works which chiefly treat of the subject of weights and measures are the *Lilavaty* and the *Sudra Ganitam*, just mentioned: the last is written in Tellingoo, but is said to have been translated from the Sanscrit; the former is a well-known Sanscrit sastrum.

The following weights are the standards for the Circars: as they are derived from the Sanscrit, however, they may be considered as general for Hindoostan:—

1 Paddy seed (grain of rice in the husk) is 1 *visum* = ½ grain.
4 Visums are 1 *gulivinda**, or 1 *patika* = 2 grains.
2 Gulivindas are 1 *addaga* = 4 grains.
2 Addagas are 1 *chinum* = 8 grains.
2½ Chinums are 1 *tsavila* = 20 grains.
2 Tsavilas are 1 *dharanum* = 40 grains.
2 Dharanums are 1 *mada* = 1 drachm 20 grains.
3 Madas are 1 *tulam* = 4 drachms.
6 Tulams are 1 *pava siru* = 3 ounces.
4 Pavas are 1 *siru* = 12 ounces.
5 Sirs are 1 *visa* = 3lbs. 12 ounces.
2 Visas are 1 *yettu* = 7lbs. 8 ounces.
2 Yettus are 1 *arda manugudu* = 15lbs.
2 Arda manugudus are 1 *manugudu* = 30lbs.
5 Manugudus are 1 *yadum* = 150lbs.
2 Yadums are 1 *pandum* = 300lbs.
2 Pandums are 1 *puladoo-candy* = 600lbs.

DRY MEASURE.

4 Dubs weight are 1 *gidda* = 2 ounces.
2 Giddas are 1 *arasola* = 4 ounces.
2 Arasolas are 1 *sola* = 8 ounces.

* Dr. Heyne calls this the seed of the *abrus precatorius*, but in what language I know not, as the common Sanscrit name is *ractica*, and the Hindoostanie *retti*: the Tamools term it *coondoo-munny*, the Tellingoos *ghoorie ghinza*, and the Malays *telãe*. The appellation of the plant in Hindoostanie is *guncha*, in Sanscrit *gunja*; the Mahometans of Lower India bestow on it the name of گومچی *goomchie*. Sir William Jones makes one of the seeds to weigh one grain and five-sixteenths; and informs us, that the *retti* weight, used by jewellers, is equal to *two grains three-sixteenths*. See Asiatic Researches, vol. ii. p. 154, and vol. v. p. 92.

2 Solas are 1 *tavadu* = 1lb.
2 Tavadus are 1 *manika* = 2lbs.
2 Manikas are 1 *addadu* = 4lbs.
2 Addadus are 1 *conchum* = 8lbs.
2 Conchums are 1 *trasa* = 16lbs.
2 Trasas are 1 *tum* = 32lbs.
5 Tums are 1 *yadum* = 160lbs.
2 Yadums are 1 *pandum* = 320lbs.
2 Pandums are 1 *puttadu* = 640lbs.

The following table of weights was given to me by a Tamool medical practitioner in great repute in Southern India, and who was partially acquainted with the European Materia Medica: —

2 Grains of dried paddy* make 1 grain (apoth.)
16 Ditto make 1 gold fanam.
1 Gold fanam makes 8 grains (apoth.)
10 Gold fanams make 1 star pagoda.
1 Star pagoda makes 4 scruples (apoth.)
10 Star pagodas make 1 pollam.
25 Pollams make 1 seer.
40 Pollams make 1 viss.
8 Viss make 1 maund.
20 Maunds make 1 parum or candy, weighing 500lbs.

In making a trial with regard to the correctness of the above table, it appeared to me, that about five grains of the dried paddy weighed two grains (apoth.); and that the star pagoda was in weight, perhaps, half a gold fanam more than ten gold fanams.

* Rice, while in the husk, is called *paddy*.

FORMS OF PRESCRIPTION IN USE AMONGST THE NATIVE MEDICAL PRACTITIONERS.

1. INFUSION. *Koodineer* கூடிநீர் (Tam.) *Woréveshāna cáshāyum* (Tel.) *Nookoo* نقوع (Duk.) A cold infusion is, in Sanscrit, *sitaha.* انقاع (Arab.)

2. DECOCTION. *Cushāium* கஷாயம் (Tam.) *Wundéné cáshāium* (Tel.) *Kara* ಕರ (Duk.) *Strutaha* (Sans.)

3. LINIMENT. *Tállum** தைலம் (Tam.) *Tayl ligānā* تيل لگانه (Duk.) *Dallum* (Tel.)

4. LINIMENT FOR THE WHOLE BODY. *Tooālay* தேஹாலய (Tam.)

5. ELECTUARY. *Layghium* லேகியம் (Tam.) *Kúlvā* خلوا (Duk.) *Layghum* (Tel.)

6. POWDER. *Shoorúnúm* சூரணம் (Tam.) *Booknee* بكني (Duk.) *Shoorúmúm* (Tel.) *Kalkaha*† (Sans.)

7. PILL. *Mātray* மாத்திரை (Tam.) *Ghōlie* گولي (Duk.) *Matirloo* (Tel.) حب (Arab.)

8. PLASTER. *Kálimboo* களிம்பு (Tam.) *Molum* مولم (Duk.) *Molam* (Tel.) مرهم (Arab.)

* This properly signifies a liniment for the head.

† This is, more properly speaking, a compound powder of several well dried plants.

EXPLANATION OF THE ABBREVIATIONS THAT ARE USED IN THIS WORK.

Sans.	Sanscrit.
Fren.	French.
Tel.	Tellingoo.
Ital.	Italian.
Germ.	German.
Tam.	Tāmool, or Tāmúl.
Arab.	Arabic.
Pers.	Persian.
Can.	Cánárese.
Cyn.	Cyngalese.
Guz.	Guzerattie.
Mal.	Malay.
Jav.	Jāvánese.
Sum.	Sumātrán.
Maléal.	Máléālie (language of the Malabar coast).
Mahr.	Mahratta.
Dut.	Dutch.
Jap.	Japanese.
Port.	Portuguese.
Hindū.	Hindooie.
Hind.	Hindoostanie.
Bāl.	Bāli (island of).
Braz.	Brazilian.
Beng.	Bengalie.
Chin.	Chinese.
Coch. Chin.	Cochin-Chinese.
Siam.	Siamese.
Nep.	Nepaulese.

POSTSCRIPT.

I cannot conclude this short proem without acknowledging how much I have been indebted to many obliging friends, whose names may be seen in different parts of this work; but I hope that I shall be excused if I here express my peculiar sense of obligation to Mr. Charles Wilkins, for the valuable information so kindly communicated to me on various subjects; and also to Dr. B. Babington, jun., and Captain Michael, for the assistance they have so readily given me in fixing the true orthography of many of the Tamool and Mahratta names.

FOR SUCH AS MAY NOT BE CONVERSANT WITH MEDICAL SUBJECTS, IT MAY BE USEFUL TO EXPLAIN CERTAIN SIGNS OR MARKS USED BY PROFESSIONAL MEN: —

gr. — a grain.
℈ — a scruple.
ʒ — a drachm.
℥ — an ounce.
℔. — a pound weight.

♏ — a minim.
fʒ — a fluid drachm.
f℥ — a fluid ounce.
O — a pint.

APOTHECARIES' WEIGHT.

Pound.		Ounces.		Drams.		Scruples.		Grains.
lb. 1	=	12	=	96	=	288	=	5760
		℥ 1	=	8	=	24	=	480
				ʒ 1	=	3	=	60
						℈ 1	=	20

MEASURE, LONDON PHARMACOPŒIA.

Gal.		Pints.		Fluid ounces.		Fluid drams.		Minims.
1	=	8	=	128	=	1024	=	61440
		O 1	=	16	=	128	=	7680
				f℥ 1	=	8	=	480
						f ʒ 1	=	60

In the Preliminary Observations to Volume Second (page xxxvii.) I have expressed a notion, that in some parts of the Travancore country several of those articles of the Materia Medica, for which the world is now indebted to America or the West Indies, might be produced. I am much inclined to think, that the *callicocca ipecacuanha* (Brotero) would thrive there as well as in Brazil. So, perhaps, might the *convolvulus jalapæ*, as well as in Mexico and Vera Cruz. In like manner the *guaiacum officinale* might be tried, and should it succeed most valuable would be the acquisition to India: both the wood and gum-resin are medicines of importance; the first is generally given in decoction, the latter in doses of

from grs. x. to ℈i.; in combination with a little opium and calomel, it is an admirable alterative and diaphoretic. The *atropa belladona*, I am quite certain, would grow well in the Mysore country, about Bangalore; so would the *colchicum autumnale*; the active principle of this plant has been found to depend on the alkaloid termed *veratria*. The colchicum autumnale is supposed by some to form the basis of the *eau medicinale* of *Huson*. In all the forms in which the meadow-saffron is given, it is powerfully and sometimes dangerously narcotic. Sir E. Home has recommended the *vinum colchici* in gout and rheumatism; the dose of the powder is gr. i., of the acetum f℈ss., of the oxymel f℈i, of the vinum *f℈i.*, and of the spiritus colchici ammoniatus *f℈i.*

The author saw the *digitalis purpurea* (fox-glove) growing in the botanical garden at Bangalore some years ago, but the plant was not robust. Could it, by any care, be made to thrive in that cool climate it would be a great point gained. The leaves and seeds are used in medicine. Internally, the digitalis is given to diminish the velocity of the circulation in various maladies; to diminish the irritability of the system; to increase the action of the absorbents*; and to increase the discharge of urine. Externally, it has been applied to scrophulous † tumours. The dose of the powder of the digitalis purpurea is from gr. ss. to grs. v., as a diuretic and

* See Dr. Duncan's Edinburgh New Dispensatory for 1826, p. 336.

† See the same.

narcotic; of the infusion from f℥ss. to f℥ij., as a diuretic; of the decoction from f℥i. to f℥iiss., as a diuretic; of the tincture from ♏viii. to ♏lxv., as a diuretic. The powder is best given in combination with squills. ℞ Pulv. digit. grs. ss., pulv. scillæ grs. iss., potassæ supertart. ℥iiss.; fiat pulvis, ter in die sumendus; in dropsy. Dr. Mossman speaks strongly of the powers of digitalis in obviating pneumonic inflammation, by its directly sedative effect; but, given incautiously, it is apt to injure, I think, the constitution, and certainly is hurtful after the purulent stage of phthisis has come on. The late Dr. Fowler ordered in pneumonia ℥ss. of the decoction to be taken twice or thrice in the twenty-four hours; which decoction was made by boiling two ounces of the fresh leaves of the purple fox-glove in a pint of pure water, till only seven ounces and a half remain, and adding to it f℥ss. of tincture of cardamoms.

The *conium maculatum* (hemlock) would not, I should think, fail at Bangalore; the powder of the leaves, in doses of from grs. ij. to grs. xv., is narcotic and sedative, so is the extract in doses of from gr. i. to grs. vi., as also the tincture given to the quantity of from f℥ss. to f℥i. Whether the *hop* (humulus lupulus) would do well in any part of India is a doubtful question; a chemical bitter principle discovered in it by Dr. Ives of New York, it is thought, contains the active virtues of the plant, which is anodyne; the dose of the extract is from grs. iv. to grs. xv., that of the tincture from ♏xxv. to ♏l.

Lettuce (lactuca sativa) is common at Bangalore, as well as other parts of India, but I am not aware that any of the lettuce opium has ever yet been prepared from it; a substance, for a knowledge of the virtues of which the world is indebted to the excellent Dr. Duncan, senior, and subsequently to Dr. Young; it has, though by no means in so great a degree, the quality of opium without its binding effects; it is sometimes called lactucarium: the dose is grs. ij. to grs. v., that of the tinctura lactucarii ml. to fʒss.

The *leontodon taraxacum* would thrive at Bangalore, or on the Nillgherry mountains; it is the common dandelion; an extract prepared from the whole plant, which contains a bitter milky juice, has been supposed by Pemberton to be of use in hepatic obstructions and dyspepsia, but Dr. Duncan, junior*, thinks it possesses little virtue: the dose is from grs. x. to ʒss.

Of other new medicines, not of Indian produce, I shall simply here mention *bismuth* and the *Prussic acid.* The bismuthi subnitras is tonic in doses of from grs. iij. to grs. v. The bismuthi oxydum album, in doses of grs. iij. and given twice daily in combination with grs. xv. of compound powder of tragacanth, is useful in dyspepsia. The Prussic acid, or, as it is sometimes called, hydrocyanic acid, is obtained from bitter almonds and peach and laurel leaves; it was discovered by Scheele in 1789, and first got pure by Gay Lussac; it is

* See Edinburgh New Dispensatory for 1826, p. 392.

liquid, colourless, and transparent, of a powerfully deleterious odour, like that of bitter almonds; it is the most deadly poison known; a single drop, when pure, destroys a dog in an instant. The *medicinal Prussic acid* is made by adding to the pure acid six times its *volume* of distilled water: the dose of this is from a quarter of a drop to two drops; it has been given as a *sedative*, in distilled water and syrup, by Magendie and others, in nervous coughs, asthma, and consumption. Dr. A. T. Thomson found a lotion, prepared with the medicinal hydrocyanic acid, spirit of wine, and distilled water, of use in impetigo.

MATERIA INDICA.

PART I.

CHAPTER I.

ARTICLES OF THE BRITISH MATERIA MEDICA FOUND IN INDIA AND OTHER EASTERN COUNTRIES. — THEIR USE AMONGST THE NATIVE INHABITANTS, INCLUDING ALSO SOME ARTICLES OF DIET FOR THE SICK.

BEFORE proceeding to describe the manner in which the following mineral acids are prepared by the native druggists, I think it proper to observe, that in all operations of this nature they are extremely clumsy and unscientific; their knowledge of chemical decomposition and new combination is confined; and their vessels and utensils are by no means of the most convenient kind. It must be gratifying, however, to the reader, to find that such attempts are made by the Tamool medical men; and I believe this is the first time the formulæ have appeared in an English garb.

I.

ACID SULPHURIC. *Ghéndága Trāvagum* கெந்தகதிராவகம் (Tam.) *Günduck ka uttir* کا عطر کندک (Duk.) *Gundáká rāsa* (Cyng.) *Arékgowgird* عرق کوکرو (Pers.) *Roohăzim* روح اعظم also *Maulki-brit* ماءالکبریت (Arab.) *Acide sulphurique.* (Fr.) *Schweffelsaüre* (Germ.)

ACIDUM SULPHURICUM.

The Tamool vytians (physicians) prepare this article nearly in the same way that we do; viz. by burning sulphur (ghéndágum) with a small portion of *pottle ooppoo* (nitre) in strong earthen vessels. They prescribe it, diluted, internally, in scrofulous affections, and in cases of general debility. It is also given in an infusion of cloves in certain bowel complaints, unaccompanied with tenesmus.

The diluted sulphuric acid is a favorite medicine of the Persians, who call it *zakāb* زاکاب (Pers.)

European practitioners give the "acidum sulphuricum dilutum" as a tonic, stomachic, antiseptic, and astringent, in doses of from ten to twenty drops. The ancients supposed acids in general to be stomachic. (Cels. lib. ii. cap. 88.)

II.

ACID NITROUS. *Pottle ooppoo trāvágum* பொட்டஸ்ப்பதிராவகம் (Tam.) *Vediloonoorasa* (Cyng.) *Shoraka teezab* شورہ کا تیزاب (Duk.) *Aréki shorā* عرق شورہ (Pers.) *Maulabker* ما الابقر (Arab.) *Sterkwater* (Dut.) *Aqua forte* (Port.) *Acide nitrique* (Fr.) *Salpeter säure* (Germ.)

ACIDUM NITROSUM.

This acid,* the Hindoos make a clumsy attempt at preparing, in the following manner, which must not be rigidly criticised by the chemists of Europe: the formula was given to me by a vytian of Trichinopoly.

Take of pottle ooppoo (salt-petre) - 20 pollums
paddicārum (alum) - 16 pollums
cáddálay poolippoo neer † - 18 pollums

Mix, and distil with an increasing heat till the whole of the nitrous acid is condensed in the *cooppie* (receiver.)

The native practitioners consider *pottle ooppoo trāvágum* as a diuretic, they also prescribe it as a tonic when properly diluted, and order it after tedious febrile affections.

European practitioners give the diluted nitric acid as a tonic and antiseptic, in doses of thirty or forty drops diluted with water.

The nitric acid is well known to be obtained in Europe from the nitrous acid, by pouring the latter into a retort, adapting a receiver, and subjecting it to a little heat, until the reddest portion of the acid shall have passed over into the receiver, and that which remains in the retort appears colourless. The diluted nitric acid is no longer supposed to possess any specific virtue in syphilis, but merely to act as a tonic; it has also of late years been used for hepatic affections in the form of a bath, as first recommended by Dr. Scot of Bombay, in 1796: when used as a bath, the diluted acid should be added to the water until it is about as sour as vinegar; or the bath may

* The nitrous acid properly prepared, consists of nitrous gas loosely combined with nitric acid and water.

† See an account of this in a note under acid muriatic.

be prepared with the nitro-muriatic acid, which is the *aqua regia* of the elder chemists.

III.

ACID MURIATIC. *Ooppoo trāvágum* உப்புத்திராவகம் (Tam.) *Lawana trāvágum* (Tel.) *Nemuk ka teezab* نمک کا تیزاب (Duk.) *Loonoo rasa* (Cyng.) *Acide Muriatique* (Fr.) *Kochsalsäure* (Ger.)

ACIDUM MURIATICUM.

This acid the Tamool doctors prepare in the following singular manner:

Take of ooppoo (common salt)	8 pollums
paddicārum (alum)	6 pollums
cádálay poolippoo neer *	8 pollums

Let the common salt and alum be first well dried and pounded together, then add the other ingredient, and distil till the whole of the muriatic acid is disengaged, and condensed in the *cooppie* (receiver.)

This is considered by the native practitioners as a stomachic and tonic, and is prescribed in conjunction with an infusion of spices.

The muriatic acid is an useful adjunct to gargles in the proportion of from ʒss to ʒij in ʒvi of any fluid in ulcerated sore throat; and is considered as tonic and antiseptic, given internally in typhus fever, and in some cutaneous eruptions: it is, without doubt,

* The dews of night falling on cloths spread over the Bengal horse gram (*cicer arietinum*) whilst growing, are rendered slightly acid. The liquor wrung out of the cloths is called in Tamool *cádálay poolippoo neer*, and is recommended by the vytians as a cooling drink; and is otherwise used by them as a common menstruum for medical purposes. The Tellingoos call it *sennágălu*. Examined by Vauquelin, it was found that it contained oxalic, malic, and a little acetic acid. (See Dr. Heyne's Tracts on India, pages 28, 29.)

powerfully antiseptic. The dose Mr. Thomson recommends in his excellent London Dispensatory, is from ten to twenty drops in a sufficient quantity of any bland fluid; or in an infusion of Cinchona bark. But, perhaps, the most important use of this acid is as a means of purifying the air from contagious miasmata, by being diffused through it in the form of vapour. Dr. Paris informs us in his Pharmacologia (p. 229), that after a copious evacuation of the bowels, he found this acid useful in preventing the generation of worms.

IV.

AGARIC. *Garikoon* கரிகூன் (Tam.) *Agārikun* اغاريقون (Arab. and Duk.) *Agaric de chéne* (Fr.) *Feuerschwamm* (Ger.)

BOLETUS IGNIARIUS (Lin.)

Cl. and Ord. Cryptogamia Fungi. Nat. Ord. Fungi (Lin.)

Agarikoon is the appellation given to this fungus, equally by the Tamools and Mahomitans of India. It would appear by a passage in Dioscorides to be originally an old Sarmatian word, and to have been thence borrowed by the Arabs. The little that is found in India, is probably brought from Alexandria by way of the Red Sea; Sir William Jones tells us, that agaric is found in Hindoostan * on a tree, the Sanskrit name of which is *caraca*.

The Boletus Igniarius, a parasitical plant which grows upon the oak, is said to be the most valuable; and is what has been so much celebrated as a styptic,

* See Asiatic Researches, vol. iv. p. 311.

and in preparing the *amadou*, used in some parts of the continent for tinder. Another species, *Boletus pini laricis*, or male agaric, has been given in substance, and is obtained of the best quality from Muscovy and Tartary.

So little is yet known of the fructification of the fungi, that the characters have been hitherto taken from the external form; seven species of agaricus are indigenous in Jamaica; and Browne, in his Natural History of that island, informs us, that the *agaricus striatus*, or large white agaric, is the most effectual application hitherto known to restrain the effusion of blood in recent or old wounds, applied in small pieces to the extremity of the vessels. See Hortus Jamaicensis, (vol. ii. p. 528.)

The Arabians place garikoon amongst their *Muffettehat*, مفتحات (Deobstruentia.)

The Boletus Igniarius, when prepared, is without smell, but has an astringent taste: chemically examined, it was found to contain, according to Bouillon la Grange, resin, extractive matter similar in its nature to animal gelatin, and different salts. Mr. Eaton has called the attention of the scientific world to this fungus, by its peculiar flesh-like property while growing; if cut, the wound heals up by a sort of first intention, leaving not even a cicatrice nor any evidence of the incision. (Solliman's Jour. vi. 177.)

V.

ALMOND, PERSIAN. *Parsie Vadomcottay* பார்சீவடாமகொட்டை (Tam.) *Waloo Looway* (Cyng.) *Inghoordi* (Sans.) *Parsee Vadomvittooloo* (Tel.) *Amendoas* (Port.) *Badamie Farsie*

بادام فارسي (Pers. Duk. and Hind.) *Louz* لوز (Arab.) *Lowzan* لوزان (Malay.) *Kateping* (Jav.) *Kataping* (Bali.) *Amandes, douces,* et *amères* (Fr.) *Bittere* and *Süsse mandeln* (Ger.)

AMYGDALUS COMMUNIS. (Lin.)

Cl. and Ord. Icosandria monogynia. Nat. Ord. pomaceæ (Lin.) *Geneine Mandel.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. ii. p. 982.

Almonds are brought to India from the sea ports of the Persian Gulph. Tavernier in his Travels in Persia (book v. chap. xii.), tells us, that they grow in great abundance in the territories of *Yesd* and *Kérman;* where the bitter and sweet kinds are distinguished by the names of *badam telkh* and *badam shéreen* بادم تلخ و بادم شيرين

The almond tree is a native of Syria, Turkey, and Barbary, but is now naturalized in the south of Europe.* It rises to the height of twenty feet, and divides into many spreading branches; the leaves are about three inches long, and the flowers are similar in form to those of the peach, but larger.

The Hindoos do not appear to use almonds as a medicine; the Arabians and Persians place blanched sweet almonds amongst their *Mobéhy-āt* مبهيات (Aphrodisiaca); the bitter sort (which Mr. Gray tells us is poisonous to many birds), they consider as *lithontriptic,* and place it accordingly amongst their *Muffuttétáht* مفتتات

Three species of amygdalus grow in the botanical garden of Calcutta; the Amygdalus Persica, or peach tree, thrives well in cool situations in India; its

* Spain and Italy; particularly in the kingdom of Naples, in the territories of Bari, Lecce, and Abruzzo.

Arabic name is خوخ (khookh); the Persian is شفتالو (*sheftaloo.*)

Mr. A. T. Thomson, in his excellent London Dispensatory, informs us, that the two varieties of *amygdalus communis*, the bitter and sweet, are not distinguished from each other by any particular appearance, and are known only by the taste of the kernel of their fruit; he adds, however, that the Jordan almonds, the best sweet almonds brought to England, are said to be the produce, not of a variety, but of a distinct species of amygdalus.

Almonds now are little used, but as food; though Bergius in his Materia Medica, tells us, of their having cured an intermitting fever, when the Peruvian bark failed. Mr. Thompson found the emulsion of service externally in the impetigo; its internal use is well known in cases of strangury.

Boullay and Proust have confirmed the analogy which had been stated to exist between sweet almonds and the human milk; the former consisting of 54 sweet oil, 24 albumen, 6 sugar, and 3 gum. The bitter almond in addition to these substances contains prussic acid in union with a peculiar volatile oil. *Noyau* is made with bitter almonds blanched, ℥i, proof spirit hss., sugar ℥iv. See Paris's Pharmacologia, p. 252. The ancients, as we learn from Pliny, had some curious notions regarding bitter almonds, considering them as soporific, emenagogue, and diuretic. See Natural History, lib. xxiiii. cap. xviii.

VI.

ALOES. *Cárriabōlum* கார்ரியாபோலம் (Tam.) *Catasha* (Mălĕălie.) *Moosumbir* مصنبر (Duk.) *Co-*

marika (Cyng.) *Oolowaton* ولواثن (Malay.) *Moosumbrum* (Tel.) *Sibbir* صبر (Pers.) *Aloe* (Dut.) *Aloes* (Port.) *Eyluwa* إيلوا (Hind.) *Suc d'aloes* (Fr.) *Glausinde aloe* (Ger.)

ALOE SPICATA (Lin.)

Cl. and Ord. hexandria monogynia. Nat. Ord. coronariæ (Lin.) *Aehrentragende aloe.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. ii. p. 185.

The above are the names commonly given to this inspissated juice and gum resin, in India and some other eastern countries; and which is the article, as it is brought from the Cape of Good Hope, or from the Island of Zocotora.* The latter is the best, being of a reddish brown colour, glossy, as if varnished, and of a delightful aromatic odour; they are evidently, however, from the same species of aloe, (Spicata). Its stem in circumference is about four inches in diameter; rising three or four feet in height; leaves spreading, about two feet long, subverticillate, gradually coming to a point, with remote teeth. The whole plant has a dusky hue; and, when cut, there exudes an amber-coloured viscid juice, which has much of the taste and smell of the Socotrine Aloes. It is growing in the Governor's garden at St. Helena.

The A. Spicata grows in abundance on the Island of Zocotora (now belonging to the princes of Hadramaut, a province of Arabia, contiguous to Yemen); and also in many parts of the south of Africa, such as in the kingdom of *Melinda*, where the greater part of the extract is prepared that is now sold under the name of Socotrine Aloes. There is another

* Zocotora was discovered by the Portuguese in 1503; for an account of the island and its capital (Tamerin), see Sir Henry Middleton's Voyage to the Red Sea, in 1610.

sort of aloes, common in the Indian bazars, and which is of a very inferior quality, resembling more what is called in Europe, Barbadoes Aloes. It is more dusky in its colour, has not the pleasant smell the other has, and is extremely bitter. It is brought from *Yemen* in Arabia to the western ports of the peninsula, and is, in all probability, obtained from the Aloe Perfoliata.* (Lin.) This species of the plant is common in India; though I cannot learn for certain that any of the *drug* is prepared from it. The Sanscrit name of it is *taruni*†; in Hindostanie and Bengalie it is called *ghrita koomāree*, and is growing in the botanical garden of Calcutta. In Tamool it is termed *kattālay* கத்தாழை and in Canarese, *ravana*. It is the *herba babosa* of the Portuguese.

Braconnot conceives aloes to be a substance *sui generis*, which he calls bitter resin; others regard it as a compound of gum, resin, and extractive matter. The native practitioners of India prescribe it in nearly the same doses that we do; from five to twelve grains as a purge; and like some of the ancient medical writers, suppose it to be less hurtful to the stomach than any other cathartic. "Ideoque omnibus catharticis aloe miscenda est." (Vide Cels. lib. ii. cap. 12). They also apply it externally round the eye, in cases of chronic ophthalmia. The Tamool doctors administer it, when toasted, in certain bowel affections to which women are subject after lying-in. Dr. Paris recommends aloes, in conjunction with assafœtida, as a purgative in the dyspepsia of old people.

* This grows to the height of ten or twelve feet, with narrowish leaves of a sea-green colour, very succulent.

† There is a coarse kind of aloe, called *musambrum*, common in the bazars, which is, perhaps, prepared in India from this species.

The Arabians place it amongst their *Mofeshyāt* مفتيات (Carminativa). The reader may find the nature of aloes discussed in an Arabic book, entitled قانوني في طتب (Kanooni-fil-tib). It is the work known in Europe under the name of the *Canons* of *Avicenna*.

Virey, in his "Histoire Naturelle des Medicamens" (page 135), tells us, that the *agave americana*, yields a yellow juice very analogous to the true aloes, and that it is considered as sudorific in decoction.

I shall conclude what I have to say of this article by observing, that it would appear to be most indicated in diseases distinguished by a deficiency of bile, such as sometimes occur after a long residence in India; or when it is necessary to stimulate the uterine vessels or rectum. It is contra-indicated in hæmorrhoidal cases. In delicate habits it is given with most safety when deprived of its resinous part. The ancients prepared with it a kind of eye-water. Vide Cels. lib. vi. p. 296. 304.

VII.

ALUM. *Paddicārum* படிகாரம் (Tam.) *Puttika* (Sans.) *Chinakarum* (Cyng.) *Púttákārie* پهت كري (Duk.) *Shebb* شب (Arab.) *Zajbelur* زاج بلور (Pers.) *Páddicāra* (Tel.) *Pedrahume* (Port.) *Aluin* (Dut.) also *Sputicca* (Sans.) *Alun* (Fr.) *Alaun* (Ger.)

ALUMEN. Sulphas Aluminæ (Edin.)

This article, though scarce, is found in some parts of Upper Hindoostan, and Captain Macdonald Kinneir, in his very interesting Geographical Memoir of

Persia (p. 224.), informs us, that it is to be met with in its natural state, in mountains south of *Kelat*, in the province of Mekran; Mr. Elphinston says, it is found in clay in Calabaugh in Cabul, but that which is commonly used in India, is brought from China, and reckoned preferable to the alum of Jeypour. (See Elmore's Directory to the Indian Trade, p. 134.)

The greater part of the alum employed in commerce, is prepared by a peculiar management of schistose pyritic clays, usually called alum ores; at *La Tolfa*, where the best Roman alum is made, the alum-stone ore is used; at *Hurlet* near Glasgow, it is from the *alum slate* that a large quantity of alum is now prepared. *

The ingenious Captain Arthur, late of the Madras Engineer Corps, told me that he discovered alum in Travancore, in a soft, dark coloured, laminated, † earthy matter, which contained sulphur in the state of sulphuret of iron. Alum is well known in Europe to be often found in connexion with coal, as in Bohemia, which, however, as far as Captain Arthur observed, it does not appear to be in the present instance. Dr. Davy found alum in the interior of Ceylon. (See his Account of that Island, p. 30.)

The native practitioners prescribe alum occasionally as we do, as an astringent in cases of obstinate

* There is every reason to believe that the alumen of the Romans was not our alum, but rather a vitriolic earth; in Pliny's time the best was the Egyptian; it was also a produce of the island of Milo.

† Captain Arthur further said, that at certain depths in the soil, under the laminated matter, he observed a regular stratum of charcoal, a circumstance which led him to conjecture that the bed in which the mineral is found, is of a vegetable origin; and we know that it has been ascertained by Vauquelin and others, that in what is termed the alum ore of *La Tolfa*, potass is met with in considerable quantity.

diarrhæa, diabetes, and fluor albus, and externally in ophthalmia. European practitioners use it externally and internally for restraining hæmorrhages, as a gargle for the mouth and throat in cases of aphthæ and cynanche, and in collyria for chronic opthalmia. In hæmorrhages the dose is from grs. iii. to ℈i every hour, till the bleeding abates. Alum whey is made by boiling ʒi of alum in a pint of milk and straining; the dose is ʒij or ʒiij :- but alum is much more commonly used in the arts and manufactures.

The constituent parts of it according to the experiments of Mr. Phillips, are

Sulphate of alumina - -	123.00
Bi-sulphate of potassa - -	119.32
Water - - -	187.00
	429.32

The Arabians place alum amongst their *Yabisatkerouh* يابساتكروح (Epulotica.)

Professor Beckman, as appears by his History of Inventions, seems to think it probable that the first alum works in Europe were established in 1459 in the island of Ischia, but that the most ancient in existence are those still carried on in the neighbourhood of Civita Vecchia in the Ecclesiastical States. In England, the first alum works were established in the sixteenth century by Sir Thomas Chaloner, near Gisborough in Yorkshire. Dr. Paris, in his Pharmacologia, informs us, that alum has the effect of retarding the acetous fermentation in vegetables. Its property of clearing muddy water is well known, as are the virtues of the alum curd in opthalmia, this is made by agitating alum with the white of an egg.

VIII.

AMBER. *Umbir* அம்பர் (Tam. and Tel.) *Kārooba* كهربا (Duk. and Pers.) *Kepoor* كپور (Hind.) *Ambar* امبار (Malay.) *Kernulbehr* قرن البحر (Arab.) *Ambra* (Cyng.) *Ambar* (Port.) *Barnsteen* (Dut.) *Hambar* (Bali.) *Succin* (Fr.) *Bernstein* (Ger.)

SUCCINUM.

Amber has been found in the earth in the Deccan of a fine quality, but it is very scarce; I have also been informed that it is occasionally met with in the alluvial soil in Travancore. The greater part of what we have in India, however, is brought from Japan, where it is called *nambu;* and also occasionally from the Philippine Islands, where, De Comyn * informs us in his State of those Countries, that it is gathered in large lumps in the vicinity of the island of *Samar* and others named *Bissayas.*

Blumenbach, in his "Histoire Naturelle" (tome ii. p. 312.), mentions, that this substance in Europe is chiefly found at *Palmnicken* in East Prussia.

It is not rarely procured at *Madagascar*, either fished on the sea coast, or dug out of the earth. It is also frequently found on the shores of the Baltic, and may be met with in Poland, Sweden, Italy, and Sicily; in the last named country, chiefly on the shore of the river Giaretta.

Copal is occasionally sold in the Indian bazars under the name of amber, and is deceitfully made into necklaces by the jewellers: a similar imposition we learn from Mr. Brydon, is practised in Sicily. (See article Copal in Part iii. of this work.)

* See his work, p. 39.

Various conjectures have been proposed respecting the origin of amber, which when rubbed is well known to have a strong negative electric virtue. Some suppose it to be a vegetable resin or gum; others a mineral oil thickened by absorption of oxygen. Parkinson thinks that it is inspissated mineral oil; Patrin, that it is honey modified by time, and mineral acids, which have converted it into bitumen. Distilled amber yields the succinic acid, and with it comes over the oil of amber, a valuable stimulant and antispasmodic. Of all the varieties of this substance, what is called the wax and honey yellow, are the most highly valued, equally because they are the most beautiful and more solid than the yellowish white-coloured kinds.

I cannot find that amber is used by the Indians as a medicine. The Arabians place it amongst their *Mokéwyátdil* مقويات دل (Cardiaca.)* In Europe, the officinal preparations of it are, the acid and oil; the latter is frequently given with good effect in cases of epilepsy and hysteria, in doses of from ten to fifteen drops combined with water by means of mucilage. The acid is produced, as above stated, by distillation; when purified and crystalized, it is fusible; and volatile, when heated; along with the succinic acid, there distils over a quantity of volatile oil of a light brown colour, and called the oil of amber.

IX.

AMBERGRIS. *Min umbir* மீன்அம்பர் (Tam.) *Amber* انبر (Duk. and Hind.) *Shāhbooi*

* For the notions of the Persians respecting amber, the reader is referred to a celebrated Persian work by Mohammed Mehdy, written in 1756, entitled معدن تجربات or Mine of Experience.

شاهبوي (Pers.) *Ambara* (Sans.) *Amber* (Dut.) *Ambargris* (Port.) *Mussambra* (Cyng.) *Anbar* عنبار (Arab. and Malay.) *L'ambregris* (Fr.)
AMBRAGRISEA (Waller.)

This is a solid opake, generally ash-coloured and brittle, fatty, inflammable substance, variegated like marble, very light, and has when heated, a fragrant and singular odour; its specific gravity ranges from 780 to 926, and it consists, according to *Bouillon la Grange*, of adipocere, a resinous substance, benzoic acid, and charcoal. Ambergris is sometimes found floating in the Indian seas, or adhering to rocks in the Eastern Islands, and is an article of commerce from New Guinea, and is also to be met with on the shores of Arabia Felix, the Maldives, and the Philippine Islands, from which last place, Mr. Crawford tells us, in his History of the Eastern Archipelago (vol. iii. p. 446), it constitutes an article in the commercial returns to China. *M. Turpin* in his "*Histoire de Siam*," informs us, that he found it in that country; but it would appear that it can be no where procured of so fine a quality as on the coast of Madagascar. *

In Hindoostan, ambergris is chiefly used as a perfume, a drop or two of the essence mixed with a large quantity of lavender water, adding much to its fragrance. Dr. Fleming, in his Catalogue of the Indian Plants, however, tells us, that the native physicians in Bengal, consider the substance itself as aphrodisiac. The name *min umbir* has been given to ambergris by the Tamuls; and we know that

* See Objects interesting to the English Nation, by Elias Habeschi, Count Gika (p. 177), also Tavernier's Indian Travels.

Dr. Schwediur and others assure us, that it has been frequently found in the intestines of that species of whale called *physeter macrocephalus;* nay, it seems a fact now pretty generally understood, that all ambergris is generated in the bowels of the whale above mentioned, which is the species termed spermaceti whale.

For further particulars on this subject, the reader is referred to Thunberg's Travels (vol. iv. p. 98), Pennant's View of Hindoostan (vol. i. p. 149), and especially to the 33d and 38th volumes of the Philosophical Transactions.

Mr. Magellan, on the authority of M. Aublet, author of the "*Histoire de la Guyane,*" published in 1774, mentions an undoubtedly vegetable ambergris, gathered from a tree which grows in Guyana *, and there called *cuma;* it is of a whitish brown colour, with a yellowish tinge, melts and burns like wax in the fire, but is rather of a more powdery consistence than common ambergris.

The Arabians place ambergris as they do the last mentioned article; for their notions as well as those of the Persians respecting it, the reader may consult the Arabic work *Tucvim al Aladviah va Mokhteser Jalinus* تقويم الادويه و مختصر جالينوس it treats of the different disorders of the human frame, and is composed by *Abul Fazil Ben Ibrahim of Tabriz.*

X.

ANISE SEED. *Somboo* சோம்பு (Tam.) *Sompoo* (Tel.) *Jera manis* جرا مانس (Malay.) *Anisu*

* See Nicholson's Dictionary of Chemistry applied to the Arts. (Article Ambergris.)

(Guz.) *Sataphusphā* (Sans.) *Sonf* سونف (Duk.) *Anison* انيسون (Arab.) *Rāzyaneh roomie* رازيانه رومي (Pers.) *Anys* (Dut.) *Anis* (Port.) *Mungfi* (Jav.) also *adis manis* (Jav.) *Kadis Manis* (Bali.) *Graines d'anis* (Fr.) *Anis* (Ger.)

PIMPINELLA ANISUM (Lin.)

Cl. and Ord. Pentandria Digynia. Nat. Ord. Umbellatæ (Lin.) *Anis bibernell.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. i. p. 1473.

Dr. Fleming gives this article a place in his "*Catalogue of Indian Medicinal Plants and Drugs,*" but I am inclined to think, that the greater part of what is found in India is brought from Persia. The plant is properly a native of Egypt, but is much cultivated in Spain and Malta. It is delicate, and rises about a foot only in height, the leaves roundish, lobed, and toothed, the flowers small and white.

The aromatic, sweetish, warm tasted seeds, are often confounded by the natives with *sweet fennel seeds*, and the Tamools then give them the name of *perinsiragum.* Anise seeds grow in Java, and are there called *adas manis;* the plant is in the botanical garden of Calcutta, and is there termed *mahooree* (Beng.)

The native practitioners prescribe anise seeds as we do, in cases of flatulency and dyspepsia; commonly made into pills, the dose from eight grains to a drachm and a half.

The Arabians place this article amongst their *Mofeshyāt* مفشيات (Carminitiva.) See notions respecting it in a medical work, entitled شرح اسباب و علامت by Nafis Ben Aviz. Celsus notices anise amongst his diuretics, "Urinam autem movent ocimum, mentha, hyssopum, anisum, &c. &c." (lib. ii. p. 92.)

ANTELOPE. *See article Deer.*

XI.

ARROW ROOT, EAST INDIAN. *Koodmāoo* கூவாமாவு (Tam.) *Kooaka neshásteh* كواكا نشاستة (Duk.) *Tikhur* تكهر (Hind.) *Kōoa* (Máleālie.) also *Kooghei.*

CURCUMA ANGUSTIFOLIA (Roxb.)

Cl. and Ord. Monandria Monogynia. Nat. Ord. Scitamineæ (Lin.)

An excellent kind of arrow root, if it may be so called, is now prepared in Travancore from the root of the *curcuma angustifolia* of Roxburgh, no way inferior to that obtained from the *maranta arundinacea* (Lin.), in the West Indies. So much of it has been made of late years on the Malabar coast, where the plant grows in abundance, that it has become a considerable object in trade, and is much prized in England.

This plant was found by H. T. Colebrooke, Esq., in the forests extending from the banks of the Sona to Nagpore, and was by him brought into the botanical garden of Calcutta. Its bulb is oblong, with pale oblong pendulous tubers only; leaves petioled, narrow lanceolar flowers, longer than the bractes. (See Flora Indica, edited by Dr. Carey, p. 31.)

The name *kooa* is given to most of the *curcumas*, *amomums*, and *kæmpherias* on the Malabar coast. The root of the *curcuma angustifolia* had long been an article of food amongst the natives before it was particularly noticed by Europeans. The finely

powdered flour boiled a little in milk, is an excellent diet for sick or infants.

The arrow root of the West Indies is there considered as *alexipharmic*, and powerful to resist poisons; the plant is a native of South America, and was first discovered by *Plumier*. The *maranta arundinacea* has lately been brought to Ceylon from the West Indies, and thrives well at the *Three Korles*, where arrow root is now prepared from it, reckoned of the finest quality. On that island a new species of maranta has lately been discovered and called maranta paniculata: the root is a medicine of the natives, and termed by the Cyngalese *gét-olua*.

For an account of the comparative quantities of amylaceous matter yielded by different West Indian vegetables, the reader is referred to vol. vii. of Dr. Simmon's Medical Facts and Observations.

XII.

ASSAFŒTIDA. *Pérungĭyum* பெருங்காயம் (Tam.) *Ingoova* (Tel.) *Hinga* also *hingoo* (Sans.) *Hing* هنگ also هينگ (Duk. and Hind.) *Angoo* انگو (Malay.) *Hilteet* حلتيت (Arab.) *Ungoozeh* انگوزه (Pers.) *Hinghoo* (Cyng.) *Duivelsdreck* (Dut.) *Assafetida* (Port.) *Ingu* (Jav.) *Hingu* (Bali.) *Assafœtida* (Fr.) *Stinkender asand* (Ger.)

FERULA ASSAFŒTIDA (Lin.)

Cl. and Ord. Pentandria Digynia. Nat. Ord. Umbellatæ (Lin.) *Teufelsdreck seckenkraut.* (Nom. Triv. Willd.) See Spec. Plant. Willd. (vol. i. p. 1413.)

I am inclined to think, however I may differ from D'Herbelot, that the Hindoostanee and Malay names

of this article are Persian, as it is in Persia only that *assafœtida* is produced, in the provinces of Korassan and Laar, from a plant there, called *dirukht ungoozeh* درخت انگوزه the Arabic name of which is *kāshem* کاشم Another Arabic name for the plant is انجدان *anjedān*, that of the root مهروت *mehroot*. (See Avicen. 130, p. 211.) For an excellent account of the appearance of the plant, the reader is referred to Mr. Thomson's London Dispensatory. It would appear to rise to the height of nine feet, with a round smooth stem surrounded with six or seven radical leaves, nearly two feet long.

Captain Macdonald Kinneir, in his Geographical Memoir of Persia*, informs us, that assafœtida is a staple export from Herat in Korassen; he also mentions, that the leaves of the plant are eaten like common greens, as is the root when roasted. The plant, it would appear, grows also in India. (See Remarks on the Husbandry and Internal Commerce of Bengal, p. 205.) This gum resin is obtained from the roots of the plants when four years old; the stalks having been previously twisted off, the tops of the roots are wounded, and from the orifices thus made, a juice exudes, which being exposed to the sun hardens into assafœtida.

Moomina, in his *Moofurdāt*†, tells us, that he conceives this medicine to be of so heating a nature, that if administered to a pregnant woman, it will kill the child in the womb.

Assafœtida is much used by the Brahmins against flatulence, and to correct their cold vegetable food.

* See pages 182, 183 of the Memoir. See also Pottinger's Travels in Beloochistan.

† See list of Persian books at the end of Part ii. of this work.

(See Aromat. Hist. Garcia ab Horto, p. 18.) The Tamool practitioners hold it in high estimation, and prescribe it as we do in cases of weak *digestion**, and as an antispasmodic and emmenagogue, in doses of from six grains to half a drachm.

The Arabians place assafœtida amongst their *Mobéyāt* (Aphrodisiaca), and *Mósébétat* مسبتات (Hypnotica.) See notions respecting it in a celebrated medical work, entitled زخيره خوارزمشاهي by Ismael Ben Hussen, written in Arabic.

The seed of the *unjedan* انجدان they place amongst their stimulants.†

XIII.

ARTICHOKE. *Hirshuf* حرشف (Arab.) *Kunghir* كنكر (Pers.) *Artichaut* (Fr.) *Alcachofa* (Port.) CYNARA SCOLYMUS (Lin.)

Cl. and Ord. Syngenesia Polygamia Æqualis. Nat. Ord. Flosculosæ. *Gemeine artischocke.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. iii. p. 1691.

The artichoke does not thrive in the Carnatic, but in the Mysore country, and in the northern provinces of India it succeeds tolerably well, and may certainly be considered as one of the most nourishing

* Particularly in that dyspeptic affection they term *azirna vaivoo*, the leading symptom of which is flatulency.

† Dr. Duncan, jun., in his valuable Edinburgh Dispensatory, informs us, that the ferula assafœtida plants which were sent to Dr. Hope by Dr. Guthrie from Petersburgh, produced healthy seed in the botanical garden of Edinburgh. Assafœtida, according to Brugnatelli, consists of gum, 60; resin, 30; and essential oil, 10 parts. Dr. Paris informs us, that in coughs attended with pulmonary weakness it is beneficial, and that in flatulent cholic in the form of enema, it acted like a charm. (Pharmacologia, p. 296.)

and best of all vegetables. The ancients prized artichokes highly, and had a strange idea that the juice of them had the power of restoring the hair of the head when it had fallen off; it was a standing dish at the Roman suppers, and Pliny tells us (book xix. chap 8.), that it was the dearest of all the garden herbs, so much so, that the lower classes of Rome were prohibited from eating it. The modern Arabians cultivate this plant with great care, and consider the root as a medicine of some value as an aperient; they call the gum of it *kunkirzud* كنكرزد and place it amongst their emetics. The receptacle of the flowers of the onopordum acanthium, or cotton thistle, may be eaten like artichokes; the plant itself, according to Withering, the ancients thought was a specific in cancerous cases.

XIV.

ASARABACCA. *Mootricunjayvie* முத்திருங்கதசேவை (Tam.) *Asaroon* اسارون (Arab. and Duk.) *Chéppoo tatakoo* (Tel.) *Oopana* (Sans.) *Tuckir* (Hind.) *Assaret* (Fr.) *Haselwurtzel* (Ger.)
ASARUM EUROPÆUM (Lin.)

Cl. and Ord. Dodecandria Monogynia. Nat. Ord. Sarmentaceæ. *Europäische Haselwurz.* (Nom. Triv. Willd.) See Spec. Plant. vol. ii. p. 838.

The appellation *asaroon*, which has been given to this article by the Arabs and Mahometan conquerors of India, Moomina informs us, was first bestowed on it by the Syrians, in whose country the plant at one time plentifully grew, and whence the dried root and leaves

are now in all probability brought in small quantities to India.

Asarabacca is but little used in medicine by the native practitioners of Lower Hindoostan, though I find that the Tamool *vytians* occasionally prescribe the root as a powerful evacuant; they also employ the bruised and moistened leaves as an external application round the eyes, in certain cases of opthalmia; but I cannot learn that they ever use them as an emetic or as an errhine, for which they are so much celebrated in Europe, where they are also administered as a stimulant in chronic opthalmia and lethargic affections, in doses of from three grains to five, repeated every night till the full effect is produced.

The plant grows in many parts of Europe, and of a good quality in several of the northern counties of England. It is perennial, flowering in May; root creeping, fleshy and fibrous; leaves entire, opposite, of a kidney shape, and on foot stalks three inches long, they are somewhat hairy, and of a deep shining green colour.

The Arabians place asarabacca amongst their *Muffuttetat* مفتتات (Lithontriptica), and *Mohelilat* محللات (Discutientia.) For their notions respecting it, the reader may consult an Arabic medical work, entitled تقيم الا دويه ومختصر by Abul Fazil Ben Ibrahim of Tabriz.

XV.

ASPARAGUS. *Nakdown* (Hind.) *Yerámyá* يرامبع (Arab.) *Margeeah* مارگياه (Pers.)

ASPARAGUS OFFICINALIS (Lin.)

Asparagus is cultivated by the English inhabitants in most parts of India, but does not thrive in the Carnatic so well as in higher and more northern provinces; its name is from the Greek word ασπαραγος: it is supposed by some to promote appetite. Suetonius informs us, that the Emperor Augustus was very fond of it. The modern Arabs prize it highly, and place it amongst their aphrodisiaca. The use of it gives a peculiar strong smell to the urine.

XVI.

BALM, ARABIAN. *Parsee cunjamkoray* பார்சிகஞசான்கோறை (Tam.) *Mékka subza* مكه سبزه (Duk.) *Bucklitulfaristum* بقلةالفرستم (Arab.) *Badrunjbūyeh* بادرنجبويه (Pers.) *Melisse* (Fr.) *Melisse* (Ger.)

MELISSA OFFICINALIS (Var.)

Cl. and Ord. Didynamia Gymnospernia. Nat. Ord. Verticillatæ (Lin.) *Citronem melisse.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. iii. p. 146.

This plant was originally brought to India from Arabia, and is therefore called Arabian Balm: it seems to differ a little in appearance from the garden balm, as we see it in Europe, resembling more what Mr. Millar has called *Melissa Romana*, which is common about Rome and other parts of Italy; the stalks are very slender, leaves rather short, the whole plant hairy, and not of so pleasant a smell as the officinal sort. It is not by any means common in India, but is occasionally met with in the gardens of rich Mahometans, who do not appear, how-

ever, to use it as a medicine. This plant is now seldom employed except as a tea and diluent in fevers.

The *melissa officinalis* was growing in the botanical garden of Calcutta in 1814, introduced from Europe in 1799.

XVII.

BALSAM OF GILEAD. *Akooyeelāsémoonroomie* اقويلاسمون رومي (Arab.) *Roghén bulsān* بلسان روغن (Pers.) *Balsamier de la mecque* (Fr.)

AMYRIS GILIADENSIS (Lin.)

Cl. and Ord. Octandria Monogynia. Nat. Ord. Terebintaceæ (Juss.) *Giliadischer balsamstrauch.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. ii. p. 334.

This liquid gum resin and odoriferous cosmetic, I have never seen in India, but I understand that it is sometimes to be met with, and I see it has a place in the *Ulfaz Udwiyeh.* We are told by Alpinus, that the tree grows wild in Arabia, and there only; on the other hand, we learn from Mr. Bruce* that it is a native of Upper Ethiopia, and was thence at an early period, transplanted into the southern provinces of Arabia. "It appears to have been cultivated in Judea 1730 years before Christ; and it was from Gilead in Judea, that the merchants brought its resinous product in early times to Egypt;" it is to this day, there called *balessan* according to Bruce; though I perceive by the *Hortus Bengalensis,* that the Amyris Giliadensis is growing in the botanical garden at Calcutta, introduced by Dr. Berry in 1798.

* See Bruce's Travels, vol. v. Appendix, p. 17.

I think there can be little doubt but that the name balsam is taken from balessan or bulsan (Pers.), which are appellations given, *not* to the produce but to the tree itself, the gum resin being in Persian, *roghen bulsan*. The fruit of the tree is called by the Arabians *hubul bulsān* حبل لبلسان and by the Persians *tókém bulsān* تخم بلسان by both of whom it is considered as attenuant, cardiac, and detergent. From it the *carpobalsamum* was supposed to have been prepared, though Virey is of opinion that this is the fruit of the plant. The ancients, we are told, held the balsam of Gilead in great esteem; in Egypt it is now considered almost as a panacea, and prescribed for bad wounds, ulcers, poisonous bites, in nervous and pulmonic affections, and also against sterility in women. (See Virey's Histoire des Medicamens, p. 290.) The Arabians of these days reckon it a valuable stomachic, and place it accordingly amongst their *Adviyaheezeh* ادویه هیضه In Turkey it is chiefly used as a cosmetic by the ladies.

Niebhur, in his Travels (vol. ii. p. 356), informs us, that the tree which produces this article in Arabia, grows in abundance betwixt Mecca and Medina; that in most parts of Arabia they only burn the wood as a perfume, but that in the province of *Hedsjas* they collect the balsam and export it from Mocha. For a very distinct account of the *Amyris Giliadensis*, the reader is referred to Mr. Thomson's London Dispensatory. I shall only here observe, that it rises about fourteen feet in height, that the wood is light and open, that the leaves are thinly scattered, small, composed of one or two pair of opposite leaflets, with an odd one; these are obovate, entire, veined, and of a bright green colour; and lastly, that the flowers

are white, three on one stalk, but two generally drop off; one only produces fruit.

Our article with eight other species of amyris, grow in the botanical garden of Calcutta, all oriental plants. (See Hortus Bengalensis, p. 28.)

BARK, PERUVIAN. *See article Febrifuge Suietenian.*

XVIII.

BEAN. *Faba* (Latin.) Κύαμος (Greek.)

The Windsor bean, vicia faba (Lin.), does not thrive in any part of India, but it is not missed, as there is one of a superior quality which succeeds admirably, the vellore or duffin bean as it is called in the southern provinces; it is about the size of the Windsor bean, but flatter, and of a more delicate taste, and highly nutritious; it was brought to India from the Mauritius, and is the phaseolus lunatus (Lin.), or more properly speaking a variety of it, not known for culinary purposes in Europe. The common country bean, as it is termed by the English, is very inferior to that just mentioned, though also a phaseolus lunatus. There is a great variety of the pulse kind in India, many of them excellent, and to be noticed in another part of this work. The kidney or French bean, phaseolus vulgaris, grows well in India, where it is of course an exotic; Mr. Phillips, in his very curious and interesting work on Cultivated Vegetables, tells us, that the old French name of this bean was *fêve de Rome*, and that it had the same name in England in the time of Queen Elizabeth; and we know that Pliny speaks of it in his history (chap. xii.),

under the appellation of phaseolus. The Arabians hold several kinds of beans in high estimation; the *bákéla* باقلا they suppose to be in its nature, hot, dry and astringent; the *loobeeyá* لوبيا they reckon diaphoretic; the *yumboot* ينبوت which the Persians call خرقوت نبطي is most eaten. The great or huzar bean, dolichos cultratus (Thun.), is a native of India, and common on the Coromandel coast, called in Tamool *tambatangāi*, in Dukhanie كهر سنبل كي پهلي in Tellingoo, *tummakāia*, in the Hort. Mal. *baramareca*, *kosapulla* (Sans.); when young it is eaten whole, when full grown the seeds only are used. For some truly classical information regarding the bean, *faba*, the reader is referred to Mr. Phillips's work above mentioned. The inhabitants of Affganistan live chiefly on different kinds of pulse, which, perhaps, contributes to make them the strongest, and handsomest race in the world. *

XIX.

BDELLIUM. *Kookool* குக்குலு (Tam.) *Googooloo* (Tel.) *Googula* (Cyng.) *Aflatoon* افلاطون (Arab.) *Mukul* مقل (Pers.) *Googul* كوكل (Hind.) *Bdellium* (Fr.)

BDELLIUM.

This gum resin is semipellucid and of a yellowish brown or dark brown colour according to its age, unctuous to the touch, but brittle; soon, however, softening betwixt the fingers; in appearance it is not unlike myrrh, of a bitterish taste and moderately

* The ancients preferred much beans to pease. "ex leguminibus valentior faba quam pisum." (Cels. lib. ii.)

strong smell; in burning it sputters a little, but cannot be said to explode, as Herman Valentine reports. Two kinds have been distinguished, the *opocalpasum* of the ancients, which is thick like wax, and the common dark sort. Dr. Alston in his *Materia Medica*, says, some make the word *bdellium* to be originally Hebrew, others Greek; it appears, however, by the *Ulfaz Udwiyeh* that it is taken from the Syrian word *budleeyoon*. Dioscorides has sufficiently well described the article, and has moreover told us, that it has got the names of *madelcon* and *bolchon*. All of this gum resin found in India, is brought from Arabia, where the tree is called *dowm* دوم it would appear that it also grows in Persia, where it is called *dérukht mukul* درخت مقل (See a work entitled اختیارات بدیع و اغراض الطب *Ikhtiarati Bedia va Agrhaz al Tibb*, in 2 vols, by the authors Aby Ben Hussein, and Ismael Ben Hussein al Jorany.) Under the name *dérukht mukul** it is mentioned by Avicenna, and we have the authority of Kampher for saying, that the bdellium is got from that tree. (Vide Amoenit: 668.) The Tamool practitioners occasionally prescribe *bdellium* as a purifier of the blood in depraved habits: they also use it externally for cleansing the foul ulcer they call *alie poonnoo*, and for discussing tumors in the joints. In Europe it has been considered as diaphoretic, diuretic, cathartic, and also pectoral, and administered in doses of from a scruple to a drachm: it is now however but little used. An ounce of picked *bdellium*, afforded Newman when triturated with water, six dramchs two scruples of gummy extract, and afterwards when triturated with

* Vide Historia Rei Herbariæ Sprengelei, tom. i. p. 272.

alcohol, two scruples of resin; two scruples remaining undissolved.

It is a lamentable fact, that the actual tree from which bdellium is procured has not hitherto been clearly ascertained by botanists; Woodville, in his Medical Botany, takes no notice at all of the article; *Sonini*, in his Travels in Egypt, informs us, that it is nothing more than common myrrh in an imperfect state, (see work, p. 558); Sprengel, in his "Historia Rei Herbariæ," tells us, that *dowm* دوم is the Arabic name, according to Forskahl, of the *borassus flabelliformis*, and it is from that tree, according to the testimony of both Kæmpfer (Amoen: 668), and *Rumphius* (Amb. i. 50), that bdellium is procured. As the reader may naturally wish to satisfy himself respecting so singular an assertion, he may find it in the work above mentioned ("Historia Rei Herbariæ, vol. i. p. 272); on the other hand, it has been said that the tree which yields the *bdellium* is no other than the *chamærops humilis* or *dwarf fan-palm* of Linnæus; and Mathiolus (p. 92), assures us, that he himself saw at Naples this bdellium-bearing *dwarf palm* of Linnæus. (See Historia Rei Herbariæ, same page and vol. as those just quoted.) Virey, in his Histoire Naturelle des Medicamens, (p. 291), informs us, that it is got from a species of amyris, the niouttoutt of Adanson, which according to Forskahl, resembles myrrh. (Mat. Med. Arab. p. 49.)

The modern Arabs believe *aflatoon* to be attenuant and pectoral, but seem chiefly to employ it as an external application, and place it amongst their *Mohelilat* مـحـلـلات (Discutientia.) I perceive that googal is one of the substances thrown into the fire by the Hindoos at their trial by ordeal. (See Asiatic Researches, vol. i. p. 400. Calcutta edition.)

XX.

BEEF. *Caro bubula.*

BOS TAURUS.

This, though generally speaking it is inferior to the beef of England, yet when the ox has been properly fed, which is now almost always the case at the chief stations in India, it is excellent, and is certainly, with the exception of mutton, the most nourishing and easily digested of all kinds of butcher meat. The oxen of India may be distinguished from those of Europe by the hump on the shoulder (which when dressed is extremely delicate and tender), and the singular declivity of the os sacrum, peculiarities which have obtained for the variety in natural history, the appellation of *zebu;* they are in other respects not quite so large as the domestic cattle of Europe. The oxen of Guzerat are considered as the most valuable; and much has been said of *Malwah, Hansi,* and *Harrianah* oxen. Cattle are exported from India to countries lying farther north, such as Nepaul, where those called the rajepoot are much prized. The bullock being a sacred animal in India, there is not seldom a difficulty in procuring beef at out stations. The Mahometans are fond of beef, and know well how to make its various preparations, beef tea (infusum carnis bubulæ), &c. &c. The beef of the bull and cow they rarely eat; veal they consider as the lightest and safest food for sick, and frequently prescribe the broth (jus vitulinum). The flesh of the *gyal* is said to be very agreeable to the taste; it is an animal betwixt a buffalo and domestic bull, commonly found betwixt the Bram-

puter and Megna rivers; it is the bos frontalis of natural history, is of a brownish colour, and has singularly thick, short, and remote horns. The ox in Hindostanie is *byln* and *gow*, the Arabians call it *buckir* بقر the Persians كاو in Sanscrit a cow is *maheyi*. While on this subject, I may mention that what is termed the yak (bos gruniens), or as the Hindoos name it *soora goy* سوره كاي is common in Nepaul and Thibet, the beautiful bushy tail of which, called *chowrie*, is an export. Colonel Kirckpatrick, in his account of the first mentioned country, says, that the natives of Thibet eat the flesh of it without reserve, but that those of Nepaul do not consider it as lawful food.

The flesh of the common buffalo (bos bubulus) is tough and not very savory.

XXI.

BENZOIN, 1st. Sort. *Malácca sambrānie* மலாக்காசாம்பிறணி (Tam.) *Loobanie ood* عود لوباني (Duk.) *Looban* لوبان (Hind.) *Cominyan* (Malay.) *Sámbrānie* (Tel.) *Devadhoopá* देवधूप (Sans.) *Liban* لبان (Arab.) *Cāloowell* (Cyng.) *Menian* (Jav.) *Manian* (Bali.) *Benjoin* (Fr.) *Kaminian* (Palembang.)

STYRAX BENZOIN (Lin.)

Cl. and Ord. Decandria Monogynia. Nat. Ord. Bicornes (Lin.) *Benzoin storax.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. ii. p. 623.

BENZOIN, 2d. Sort. *Sambrānie* சாம்பிறணி (Tam.) *Ood* عود (Duk.) *Tooaralla* (Cyng.)

There are two sorts of benzoin distinguished in India, the finer and dearer of which the Tamools call *malacca sambranie*, and the *Mahometans, loobanie ood;* it is the *head benzoin* of commerce; to the other kind, the Tamools have given simply the name of *sambranie*, and the Mahometans that of *ood;* this is the *foot benzoin* of commerce, and is sometimes called the *Caffres head.*

The finest kind has a very fragrant odour, but little or no taste; the mass is white or yellowish, somewhat translucent and brittle; this is the sort that is obtained by wounding the bark of the tree near the origin of the lower branches: the inferior kind, and that which I have called above the second sort, is of a brownish colour, is harder, and is mixed with impurities.

This very fragrant, but insipid balsam, is brought to India from *Sumatra,* * exported from *Acheen,* which has occasioned it sometimes to be called by the Tamools *Achīe pawl sambranie;* it is also a product of *Siam,* † of Laos, and of Java, and we learn from Baron's description of Tonquin, that it is to be procured in the country of Laos, where the tree grows.

The less valuable sort is burnt by the Malays and Arabs to perfume their temples and houses; the better kind is used by the Hindoos in medicine, particularly by the Tamools, who prescribe it internally in doses of from four to fifteen grains in *kshyum,* which is consumption, and *suvāsa cāshum* (asthma.) In Europe it is now seldom ordered in practice. The

* See Marsden's Sumatra, p. 123.

† See Turpin's "Histoire de Siam." Mr. Crawford, however, in his *Indian Archipelago,* says, Borneo and Sumatra are the only countries that produce it. (See work, vol. i. p. 518.)

products, Brande obtained by distillation from 100 parts of benzoin, were, benzoic acid, 9.0; acidulated water, 5.5; butyraceous and empyreumatic oil, 60.0; charcoal, 22.0; and a mixture of carburetted hydrogen and carbonic acid, 3.5 parts. The tree which yields benzoin is tall, with many round branches, its leaves are alternate and pointed, and the flowers are in compound axillary clusters, and nearly as long as the leaves.

Mr. Thomson, in his London Dispensatory, has given an excellent botanical description of the plant; it is said now to thrive well at Prince of Wales's Island, at Bourbon, and also, by Mr. Colebrooke's * account, in India. It is growing in the botanical garden at Calcutta, introduced by Dr. Lumsdain from *Sumatra* in 1812; also the species *serrulata* a native of Chittagon, introduced in 1810.

The ancients employed much the common styrax (styrax officinale), as a resolvent. "Alvum moliri videtur, concoquit et movet pus, purgat, discutit." (Celsus, lib. iii. cap. 5.)

XXII.

BEZOAR. *Vishík kúlloo* விஷக்கல்லு (Tam.) *Viságul* (Cyng.) *Zéhér morah* (Duk. and Hind.) *Fāduj* فادج (Arab.) *Padzehr kanie* پادزهر کاني (Pers.) *Goleha* گولها (Malay.) *Bezoarsteen* (Ger.) *Bazar* (Port.) *Gorochanā* गोरोचना (Sans.) *Bezoard* (Fr.) also *Koroshanum* (Tam.)

BEZOAR ORIENTALE.

* See Remarks on the Husbandry and Internal Commerce of Bengal, p. 205.

This is a concretion found in the stomach of an animal of the goat kind; it has a smooth glossy surface, and is of a dark green or olive colour; the word bezoar, however, has lately been extended to all the concretions found in animals; such as the *hog bezoar*, found in the stomach of the wild boar in India; the *bovine bezoar*, found in the gall-bladder of the ox, common in Nepaul; and the *camel bezoar*, found in the gall-bladder of the *camel;* this last is much prized as a yellow paint by the Hindoos, and is called by the Tamools *wootay kórāshanum;* nay, *Pennant* tells us, that a very valuable kind is got in Borneo, from a species of monkey; it is of a bright green colour, and has a finer lustre than the goat bezoar. (See Lockyer's Account of the Trade of India, p. 56.) It is a fact, that from Borneo* and the sea-ports of the Persian Gulph, the finest bezoar is brought to India; the Persian article is particularly sought after, and is said to be procured in the neighbourhood of *Mount Bārsi*, from animals of the goat kind, *capra gazella* (Lin.) Christophorus a Costa† observes, that a factitious sort is made at Ormus; the same author mentions, that a bezoar is sometimes obtained from pigs.

This substance appears to have been first used as a medicine by the Arabians; *Avenzoar* gives us a wonderful account of it; and *Razis*, in his *Continens*, describes it fully, and extols its good qualities as a sudorific and alexipharmic. It was formerly given in doses of a scruple; Schroder, however, did not administer more than from three to twelve grains.

* See Dr. Leyden's Sketches of the Island of Borneo, vol. vii. Transactions of the Batavian Society.

† See Fasciculi Amœnitatem Exoticorum, ab Auctore Engleberto Kæmpfeeroett, M.D. pp. 398. 410.

It is no longer ordered in practice in Europe. The Hindoos suppose it to possess sovereign virtues, as an external application in cases of snake bites or stings of scorpions; and its various oriental names imply that it destroys poisons.

The Persians are well acquainted with its absorbent nature, and prescribe it in conjunction with a little black pepper in the cholera morbus, which they call هیضت *hayzet*, very wisely conceiving that that disease is occasioned by an acid in the first passages, which requires but to be neutralized to be removed; and I perceive by a Tamool sastrum of Tunmundrie Vaghadum, that he recommends for the same disease *koroshanum*, or cow's bezoar. Dr. Davy, on examining what are called the snakes stones of India, which are supposed to have great virtue in curing snake bites, found them to be simply bezoar, and as such, could have no real virtue in such cases. I shall conclude this article by observing, that another Arabic name for bezoar is *hejer-atis* هجر اتس signifying literally *goat stone;* and that in Arabia Petræa, a kind of bezoar, called in Arabic *teriac-ul-hyté* تریاق الحیتہ is said to be found in the corner of the eye of a mountain ox. In the centre of the oriental bezoar, which is composed of smooth concentric laminæ of an olive colour, not unusually is found in a nucleus, small pieces of straw, or stones or seeds, but most commonly the pod of a particular kind of fruit. What is called the occidental bezoar is much more rough in its surface than the other, and has sometimes been found in the camel tribe. The specific gravity of the first is 2.233; that of the last is 1.666.

XXIII.

BISHOPSWEED, SEED OF. *Womum* ஓமம் (Tam. and Tel.) *Ajamōdum* also *Brahmadarbhā* ब्रह्मदर्भा (Sans.) *Assamodum* (Cyng.) *Amoos* اموس (Arab.) *Nankhah* نانخواه (Pers.) *Ajoowan* اجوان (Duk. and Hind.) *Amyzaad* (Dut.) *Ameos* also *Saldrié* (Port.) *Aymadāvum* (Can.) *Sison* (Fr.) SISON AMMI (Lin.)

Cl. and Ord. Pentandria Dyginia. Nat. Ord. Umbellatæ (Lin.) *Kleines sison.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. i. p. 1437.

This is a small, warm, aromatic seed, resembling *anise seed* in its virtues, and much used by the native doctors as a stomachic, cardiac, and stimulant; and given in doses of from ten grains to two scruples. On showing it to Dr. Rottler, he made no hesitation in declaring it to be the seed of the *sison ammi* of Linnæus. It is, however, the same seed which Dr. Fleeming calls (ajawain) in his "Catalogue of Indian Medicinal Plants," and which, Dr. Roxborough says, is the produce of a species of *lovage*, named by him, *ligusticum ajawain*, which in Bengalie is called *juvanee:* the plant, he tells us, is "annual, erect, leaves superdecompound, with filiform leaflets, ridges and furrows of the seeds distinct and scabrous." By Forskahls account, the plant is named in Egypt *chælle.* (See his Flor. Egypt. Arab.) The seeds are much employed by the veterinary practitioners in India, in diseases of horses and cows. The Persians place them amongst their *Muffettehat* مفتحات (Deobstruentia.)

There is a plant which grows wild in the Coimbatore country, and which I believe is a variety of the *sison ammi*; the natives call the seeds of it *coodrie womum* (Tam.), which signifies horse womum; and suppose them to be an efficacious remedy for the gripes in horses. The *ligusticum ajauain*, with another species, the ligusticum diffusum or *bun ajouan*, (Hind.) grow in the botanical garden of Calcutta. (See Hort. Bengalensis, p. 21.)

XXIV.

BITUMEN PETROLIUM, or ROCK OIL. *Muntylum* மண்ணெண்ணெய் (Tam.) *Boomie tylum* (Sans. and Tel.) *Minnia tanna* (Malay.) *Ippoo* (Sumatran.) *Késosonoabra* (Japanese.) *Neft* نفط (Arab.) *Muttie ka tail* متي كا تيل (Duk. and Hind.) also *Kuffer aliehood* قفر اليهود (Arab.) *Bitume de Judee* (Fr.)

BITUMEN PETROLIUM.

The bitumen family, as Mr. Nicholson justly observes, includes a considerable range of inflammable, mineral substances, of an oily or resinous nature; burning with flame in the open air, without being converted into an acid like sulphur, or into an oxide like the metals: they are of different consistence, from a thin fluid to a solid.

The *bitumen naptha* is the most fluid when found pure, as it issues out of white, yellow, or black clays in Persia and Media; it is a fine, white, colourless, thin, fragrant oil, inclining occasionally to a pale brown tint. It is also brought to England of a very

superior quality from Monté Ciaro, near Piacenza in Italy. Analyzed, it is ascertained to consist of carbon, hydrogen, and a little oxygen; it is very inflammable, and dissolves resins and the essential oils of thyme and lavender. A much less pure article, and properly speaking the mineral oil, or *bitumen petrolium* of the shops, is procured from Monté Festino, not far from Modeno, and is, I presume, nearly the same in its nature and appearance as our Indian article, which is brought to India from *Ava*,* the Sooloo islands, Japan, Sumatra, and *Borneo*.† It is of a reddish or somewhat dark brown colour and unctuous feel, with rather an unpleasant odour, and pungent, acrid taste; it is not soluble in alcohol, and looks like that finer sort of petrolium naptha rendered thicker and browner by exposure to the atmosphere; it burns with a blueish flame, and is composed of carbon, hydrogen, and oxygen. Both species combine with fat, resins, essential oil and camphor; with alkalies they form soapy compounds, and sulphuric and nitric acids change them into solid resins.

The *bitumen petrolium* is called earth oil, also rock oil, in India, from the circumstance of its having been found dropping from rocks in wells in the Birman dominions. It is also a product of Armenia, as Capt. Macdonald Kinneir‡ has stated, and according to Hanway,§ is an export from Bussora, procured from Bāku, on the west coast of the Caspian Sea; it may also be obtained from a lake in the Island of Trinidad. Capt. Macdonald Kinneir‖ speaks par-

* See Symes's Embassy to Ava, vol. iii. p. 263.

† In Barunyan in Borneo, (see Dr. Leyden's Sketches of Borneo in the 7th volume of the Transactions of the Batavian Society.

‡ See his Geographical Memoir of Persia, p. 319.

§ See his Travels in Persia, vol. i. p. 263.

‖ See his Memoir, pp. 38, 39, 40.

ticularly of this substance, and observes "there are two kinds of *naft* or naptha found in Persia, the black and white: the first is the bitumen so famous in the Babylonian history, it resembles pitch, and is used for besmearing the bottoms of most of the vessels that navigate the Euphrates and Tigris; and by the Russians, for burning instead of oil." The white kind, which may be the bitumen candidum of Pliny, is of a much thicker consistence, and is somewhat in appearance like tallow; this last has no resemblance to pitch, but emits a better light, and has not so unpleasant a smell. The most productive fountains of the black kind are in the vicinity of *Kerkook*, *Mendali*, and *Hit* on the banks of the Euphrates. The only fountain of the white sort, appears to be at the foot of the mountains of Bucktiari, half way betwixt the city of *Shuster* and the valley of *Ramhormouz*.

The Tamool doctors order rock oil as an external application in rheumatic complaints, as also in cases of epilepsy, hysteria, and palsy, in all which affections it is rubbed on the part with the hand in the form of a liniment. *Dr. Fleeming* has declared, that in chronic rheumatism he can recommend it from his own experience, as a more efficacious remedy than *cajeput oil.* (See his Catalogue of Indian Plants, p. 56.) *Mr. Jameson* informs us in his System of Mineralogy, that in Piedmont, Japan, Persia, and other countries, mineral oil is used for burning in lamps in place of oil; it is also, he adds, occasionally employed instead of common tar, and sometimes as a varnish, and in the composition of fire-works. The bitumen naptha of Persia was lately accurately examined and compared with the naptha prepared from coal in Scotland, by the professor of chemistry in Glasgow.

He found it colourless as water, its specific gravity 0.753, with exactly the same taste and smell as the article made at home; the two bitumens in fact, the professor observed, to resemble each other in all their chemical qualities, but he could not get that made from the coal, to be quite so light as the Persian naptha. (See Annals of Philosophy, No. 88.) The ancients, and especially Celsus, would appear to have considered bitumen as possessing medicinal qualities similar, or nearly so, to those of common storax. (See Celsus, lib. iii. cap. 5.) In France, according to Alibert, petrolium has occasionally been administered for the removal of *ascarides;* in Egypt, the same author says, it is given in cases of tænia. (See Nouveaux Elemens de Therapeutique, vol. i. p. 391.)

It would appear, that in a late improvement made in the steam engine by M. De Montgomery, purified bitumen after having served in the form of vapour, is turned to the double purpose of serving as a combustible substance. In the improvement alluded to, the fire-place, the pipe, and mechanism, are contained inside the boiler, which is itself enclosed in a double case. The vapour may therefore be raised to a very high degree of tension, without danger; and this advantage renders the bulk of this new machine from 40 to 50 times smaller than that of the present steam engines of equal power.

XXV.

BOLE ARMENIC. *Simie kāvikūlloo* ಕೆಂಪುಮಣ್ಣು ಕಾವಿಮಣ್ಣು (Tam.) *Ghilārmenie* گلارمني

(Pers. Duk. and Hind.) *Simie kavi rāi* (Tel.) *Hejr urmenie* حجر ارمني (Arab.) also طين ارمني (Arab.) *Goorookatta* (Sans.) *Bole d'armenie* (Fr.)

Bolus (Waller.)

The *bole* that is commonly met with in India, is brought from the Persian Gulph, and is that known in Europe by the name *bole armeniac*, it being a product of Armenia; it is soft, feels greasy to the touch, adheres strongly to the tongue, and is very frangible; it is generally of a yellowish brown colour, though sometimes it is seen of a fine flesh red, and that sort is most prized by the native dyers and painters, who call it *ségápoo kāvikul* (Tam.), or red *bole*; it would appear to be tinged by an oxide of iron.

The Tamool practitioners prescribe *bole armeniac* as an astringent in fluxes of long standing, and suppose it to have considerable efficacy in correcting the state of the humours in cases of malignant fever, and particularly in allaying what they call *vikkil* (hiccup.) Its constituent parts are, silica 47.00, alumina 19.00, magnesia 6.20, lime 5.40, iron 5.40, water 7.50.

Mr. Jameson has made *bole* the fourth species of the soapstone family, and in speaking of its chemical characters, says, " when immersed in water, it breaks in pieces with an audible noise, and evolution of air bubbles; before the blow-pipe it melts into a greenish grey-coloured slag. The *French bole*, which is of a paler red, is still retained in the *Materia Medica* of the London College.

The *red bole* of Constantinople (argile rouge), of which the Turks make their pipes, and also that variety called in Bengal the *patna earth*, with the other ingredients, contain a portion of silex. Some savage

nations, such as the *Otamaques* of America, are in the habit of eating boles to relieve them from the pains of hunger; and it is remarkable that they do not thereby become lean, at least according to the testimony of *Fray Ramon Rueno*, a missionary.

Baron Humbolt observes, however, that they do not eat every kind of clay, but select such earths as are unctuous and smooth to the feel. The same distinguished writer assures us (as is quoted by the author of Columbia, vol. i. p. 569), that Labbillardiere saw in the Indian Archipelago, little reddish cakes exposed for sale, called *tanaampo;* these were of clay slightly baked, and which the natives eat with pleasure. *M. Leachenault* has published some curious details on the *tanaampo* of the *Javanese*, which by his account, these people only take when they wish to become thin, and to have a slender shape. I shall conclude this article by remarking, that the inhabitants of New Caledonia to appease their hunger, eat great pieces of a friable *lapis ollaris*, which by *Baron Humboldt's* account, on being analysed by M. Vauquelin, was found besides magnesia and silex, to contain a small quantity of oxide of copper. In Germany, the workmen employed in the quarries of *Kiffhæuser*, spread a very fine kind of clay on their bread instead of butter, and which they call *stein butter*.

XXVI.

BORAX. *Velligarum* also *Vengārum* வெங்காரம் வெண்காரம் (Tam.) *Lansipooscara* (Cyng.) *Sohaga* سوهاگا (Duk. and Hind.) *Pattérie* پتري (Malay.)

Buruk بورق (Arab.) *Tunkar* تنكار (Pers.) *Boras* (Dut.) *Borax* (Port.) also *Piger* (Malay.) *Piger* (Jav.) *Piger* (Bali.) *Tunkana* (Sans.) *Chaulārya* (Nep.) *Borax* (Ger.) *Borate alcalinule de soude* (Fr.)

SUB-BORAS SODÆ.

This is a natural salt, found dissolved in many springs in Persia; and *Abbè Rochon* informs us, in his "Voyage to Madagascar and the East Indies," that it can be procured of a superior quality in China, but it is much more plentiful in Thibet, where previous to its being refined by the Dutch, who keep the process a secret, it is called *tinkal*, and hence its Persian name *tinkar*. *Tinkal* is got from the bed of a lake in Thibet, about fifteen days journey from *Tissoolomboo;* it is many miles in circumference, and the water of it, we are told, never freezes.* It is dug up in large masses, and sent to Europe in crystals of a greenish white colour, but mixed with sand and other impurities.

Borax is too well known to require being particularly described here. It is without smell, and has a cool, styptic, and somewhat alkalescent taste. The native doctors of India consider it as deobstruent and diuretic; the vytians especially, seldom fail prescribing it in cases of what they call *mághōdrum* (ascites), and *mootraykritchie* (dysuria.)† They, like some of of the writers of old (Schroder, p. 290), administer it to promote delivery; and also occasionally employ it

* See Turner's Embassy to the Court of the *Tishoohama*, p. 406.

† It is not now given internally in Europe; the boracic acid was formerly used as a medicine, under the name of Homberg's sedative salt.

as we do in apthous affections. Borax is sometimes adulterated with alum and fused muriate of soda.

The Arabians and Persians, as we learn from the Ulfaz Udwiyeh, place borax amongst their *Mulittifat* ملطفات (Attenuentia.) This substance consists, according to Bergman, of 34 acid, 17 soda, and 49 water. It will be further noticed in that part of this work which is applicable to the arts.

XXVII.

CABBAGE. *Kirnub* كرنب (Arab.) *Kélum* كلم (Pers.) *Garten kohl* (Ger.) *Chou* (Fr.) *Kopee* (Hind. and Beng.)

BRASSICA OLERACEA (Lin.)

Cl. and Ord. Tetradynamia Siliquosa. Nat. Ord. Cruciferæ.

Cabbages grow well in every part of India, and are esteemed as perhaps the best of all the pot herbs in that country, but the seed is brought regularly from the Cape. Various kinds are cultivated, but the small sugar loaf has the preference. Cabbage is considered as of a flatulent nature, and is therefore generally avoided by such as have weak digestions, but I believe in this there is a good deal of fancy. The ancients, Greeks as well as Romans, believed the cabbage to possess peculiar virtues, the first people called it κοραμβλη; the Latin name brassica, Mr. Phillips ingeniously supposes to come from the word *præseco*, because it was cut off from the stalk; the qualities above alluded to are, that it prolonged life and cleared the brain when intoxicated with wine! properties very different indeed from those given by Lunan in his Hortus Jamaicensis, vol. i. p. 130.

The Arabians and Persians prize cabbage highly as food, and besides, consider it as powerfully suppurative; the seeds تخم الكرنب they believe to be stomachic. Turnip cabbage grows admirably in India, and is a great delicacy at the tables of Europeans: it is the brassica congylodes (Miller). The red cabbage (brassica rubra), *brocoli* (b. botrytis cymosa), and *cauliflower* (b. florida), are also cultivated in India, but the latter only thrives in the more northern provinces or in elevated situations, such as Mysore. Twenty-four species of brassica have been noticed by Wildenow. (Spec. Plant. vol. iii. p. 545.) In the botanic garden of Calcutta, four of these grow. Three kinds appear to have been only mentioned by the most ancient Greek writers, the *selinas* or *crisped*, *lea*, and *corambe*. (Vide Pliny, book xx. c. 19), also Phillips's Cultivated Vegetables, a work I cannot sufficiently call to the attention of the curious.

XXVIII.

CACAO-NUT. THEOBROMA CACAO.

Cl. and Ord. Polyadelphia Decandria. Nat. Ord. Columniferæ. *Walvier caca.* (Nom. Triv. Willd.)

This article, properly speaking, should not have had a place here, but that I understand the tree, which is peculiarly handsome, with lanceolate oblong leaves and a brown bark, grows well at Bourbon, whence its produce is an export; and we learn from De Comyn in his "State of the Philippine Islands," (p. 23.), that it is now much cultivated in those countries, and the chocolate made from the nut, particularly in the island of Zebu, is esteemed

even superior to that of Guayaquil, in America. In Java there is simply sufficient grown for the consumption of the European colonists.

The cacao or chocolate tree might in all probability thrive well in sheltered situations in Lower India, and would no doubt be a great acquisition. I perceive, by Dr. W. Wright's Observations on the Medicinal Plants of Jamaica, that it now grows well in all the French and Spanish islands. There is this peculiar to the theobroma cacao, that it is the only plant of its class and order.

Cacao is of two kinds, that made from the whole nut, and that from the shell; they are both much lighter, though perhaps a little less nutritive than chocolate. The cacao prepared from the shell, I have known to agree with weak stomachs when many other things were rejected; both this and that prepared from the whole nut, should in such cases be made thin and clear. Chocolate, Mr. Tweed in his Observations on Regimen and Diet, informs us, is a safer drink for such as are subject to flatulence than any thing prepared of farinaceous substances. (See his work, p. 189.) It is a kind of paste prepared with the triturated nut, after having been roasted, and several other ingredients, the chief of which are Vanilla sugar and a little cinnamon. Most foreigners prefer the Spanish chocolate; but the English is made with more care and is much less oily.

XXIX.

CAMPHOR. *Cárpoorum* also *Soodun* சூடம் கற்பூரம் (Tam.) *Cápooroo* (Cyng.) *Kāfoor* كافور (Arab.

and Pers.) *Kaafur* (Malay.) *Kupoor* کپور (Hind.) *Kāmper* (Dut.) *Alcāmfer* (Port.) *Kāpur* (Bali.) कर्पूर (Sans.) *Camphre* (Fr.) *Kampher* (Ger.)

DRYOBALANOPS CAMPHORÆ (Colebrooke.)

Cl. and Ord. Polyandria, Monogynia. Nat. Ord. Guttiferæ.

Camphor, which has lately been ascertained by chemists not to be a resin, but a vegetable principle *sui generis*, is very much in use amongst the native practitioners of India, who prescribe it externally as we do in cases of sprains and rheumatism. The vytians suppose it, when given internally, to possess the power of shortening the cold stage of an intermittent fever, and to be highly useful as a stimulant in the disease they call *kistnah doshum* (typhus fever). The modern Arabians place it amongst their *Mokewyat-dil* (Cardiaca). The ancient Arabians conceived it to be refringent. *Orfila* places camphor amongst his poisons, and tells us, that three or four drachms of it divided by an oil, and given to a dog, is quickly taken into the circulation, strongly excites the brain, and soon kills. (Traité des Poisons, vol. ii. part ii. p. 19.)

The greater part of the camphor, as well as camphor oil, that is found in the Indian bazars, is not the produce of the *laurus camphora* which grows in *Japan* * and in *China*†, but is brought to India from *Sumatra*‡ and *Borneo*.§ The camphor of Baroos on the east coast of Sumatra, (and which the

* See Thunberg's Travels, vol. iv. p. 91. English translation.

† See Barrow's Travels, p. 535.

‡ See Mr. Macdonald's Account of the Products of Sumatra, in vol. iv. of the Asiatic Researches.

§ See Dr. Leydon's Sketches of Borneo, vol. vii. Trans. of the Bat. Society.

Malays call kafoor or kapur-baros,) is reckoned very good, but that of Borneo, Dr. Leydon says, is the finest in the world; and which is brought, according to Mr. Hunt's account in his Sketch of Borneo, from the Morut country. The method of obtaining it is well described by Père d'Entrecolles in his Amœnit. Exotic. p. 772.

Mr. *Macdonald*, in his Account of the Products of Sumatra (in vol. iv. of the Asiatic Researches), informs us, that the tree from which camphor is there obtained differs considerably from the *laurus camphora*. Indeed, Kæmpher (Amœn. Exotic. p. 773), had long ago suggested the idea, that the article brought to Europe from Sumatra and Borneo, was not procured from the laurus camphora; and thanks to the enlightened research of Mr. *H. T. Colebroke*, it is now fully ascertained to be from a tree of a different genus, the *dryobalanops camphora*, which grows to a great height in the forests on the north-eastern coast of Sumatra, and especially in the vicinity of *Tapanooly*. (See Asiatic Researches, vol. xii. p. 539.) To procure the oil, which is even more esteemed than the camphor itself in eastern countries, it is only necessary to wound and pierce the tree, when it exudes from the orifices so made. To get the concrete camphor, the tree must be cut down, when it will be discovered in small white flakes, situated perpendicularly in irregular veins, in or near the centre of the tree.

Camphor, it is now well known, may be procured from many different *plants**, such as thyme, marjoram, ginger, sage, &c. There is a species of the last common in India, *Salvia Bengalensis* (Rottler), the leaves

* See Sir Humphry Davy's "Elements of Agricultural Chemistry," p. 99; also see "Virey's Histoire Naturelle des Médicamens," p. 175.

of which smell so powerfully of camphor, that they have got the Dukhanie name of *kafoor ka pawt*, or camphor leaves; there is no doubt but that they contain a great deal of camphor. The Cyngalese sometimes prepare a kind of camphor from the roots of the cinnamon tree. Mr. Thomson, in his new London Dispensatory, has given an excellent botanical account of the *laurus camphora*, as well as the *dryobalanops camphora*, and has described the various qualities of the article itself. *Correa*, in his Account of Borneo, tells us, that the *shorea robusta* of Roxburgh (Cor. Pl. vol. iii. fig. 212.), yields a camphor superior to that of Japan or China; which is noticed also, I see, by Virey, in his "Histoire Naturelle des Médicamens," (p. 163.) The camphor tree is growing in the botanical garden of Calcutta, introduced by M. Cere in 1802; its Sanscrit name is *kurpoora*.

Camphor is prescribed by the native Indian practitioners in doses of from three to fifteen or twenty grains. Amongst European practitioners in that country, it is chiefly valued for its virtues in obviating the irritating effects of mercury, and at the same time, rendering it more certainly efficacious; otherwise it is employed as in Europe with indefinite effects, in typhus fever, gout, rheumatism, and hysteria. I shall conclude this article by observing, that a substance has lately been prepared artificially by M. Kind, a German chemist, which seems to resemble camphor in most of its properties; it is made by passing a current of muriatic gas through the oil of turpentine. (See Dr. Brewster's Edinburgh Encyclopedia, vol. xiii. part i. p. 344.)

XXX.

CAPILLAIRE, SIRUP OF. *Sirop de capillaire* (Fr.)

ADIANTUM CAPILLUS VENERIS.

Cl. and Ord. Cryptogamia, Felices (Lin.) *Frauenhaar krullfarrn.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. v. p. 449.

This sirup, which is brought to India from the island of Bourbon, is prepared with the leaves of the ad. cap. ven., but at the same island it is also made with the leaves of another species of maidenhair, the ad. caudatum, which grows on the Courtalum hills in the southern part of India, also on Ceylon; both plants are natives of Cochin China, but do not appear to be there considered as medicinal. The first is also found at Amboina, and is the *micca miccan ultan* of Rumphius. (Amb. lib. t. 25.) It is also to be met with on Java, as Dr. Horsfield informs us. The adiantum cap. ven. is the περιπλοχαδι χοινον of the modern Greeks, who employ the sirup of it in chest complaints; it is no doubt pectoral and slightly astringent, though its decoction, if strong, is a certain emetic. Sirup of capillaire is much prized amongst the French and Portuguese inhabitants of India, as a medicine in catarrhal complaints, but is little sought after by the English.

XXXI.

CARDAMOM, LESSER SEEDS OF. *Yaydersie* ஏலரிசி (Tam.) *Yaylakooloo* (Tel.) *En-*

sal (Cyng.) *Ebil* ايل (Arab.) *Kakeléh séghār* صغار قاقله (Pers.) *Capalaga* قاپالاغا (Malay.) एला (Sans.) *Eelāchie* ايلاچي (Duk.) *Cardamomos* (Port.) *Cardamomen* (Dut.) *Elettari* (Rheed.) *Kapol* (Jav.) *Gujarati elachi* (Hind.) also *Heelbuya* هيلبوا (Arab.) *Petit cardamome* (Fr.) *Kleine kardamomen* (Ger.)

ELETTARIA CARDAMOMUM.

Cl. and Ord. Monandria, Monogynia. Nat. Ord. Scitamineæ (Lin.) Maton. Trans. of the Linnæan Society, vol. x. part ii.

The plant which produces the *lesser cardamom seed*, has lately occasioned the establishing of a new genus (elettaria), and which has been so named from the *Máléālie* word, *elettari*, the appellation given to the plant on the Malabar coast, where cardamoms are produced in great abundance, and are in common use amongst the native practitioners as a warm and agreeable carminative and stomachic, prescribed in doses of from eight grains to half a drachm in conjunction with other medicines.

Cardamoms are also a product of the *Wynad* mountains, of Cochin China, of Siam, of *Camboja*, and *Ceylon*. *Elmore*, in his Directory to the Trade of India, speaks of three sorts of cardamom, the first (he says, the *greater*), grows in Africa, and the second in Java, the pods of which are rather long, and more triangular than round; his third sort is our present article; the grains of it are small, hot, spicy, and pleasant to the taste.

The *elettaria cardamomum* is described by *Rheed* in vol. ix. of his Hortus Malabaricus; and a good description of it has been given by Mr. Thomson in his new London Dispensatory. On the Malabar coast the plant is called *ailum cheddy*.

The Arabians place cardamoms amongst their *Mokewyat-dil* (Cardiaca). In Java the plant grows wild in the woods, and is there called *kápálūga;* but its produce is much inferior to the cardamoms of Malabar. There is a wild kind of *cardamom,* the *amomum aromaticum* (Roxb.), found on the eastern frontiers of *Bengal,* where it is called *morung elachi,* the fruit of which is used as a spice and medicine by the natives. (See Flora Indica, p. 44.) For a scientific account of the cardamom of the Malabar coast by Dr. D. White of the Bombay establishment, the reader is referred to the 10th vol. of the Linnæan Transactions. There is now growing in the botanical garden at Calcutta another amomum, the amomum maximum (Roxb.), the seeds of which possess a warm, pungent, and aromatic taste, by no means unlike that of the true cardamomum. The amomum cardamomum (Lin.), or what Rumphius distinguished by the name of cardamomum minus (Amb. 5. p. 152. t. 65.), is that species, the seeds of which come the nearest in taste and virtues to the officinal article, and which are used as a substitute for them by the Malays; the plant is a native of Sumatra and other islands to the eastward of the Bay of Bengal, and was sent, as Dr. Roxburgh informs us, from Bencoolen to the botanical garden at Calcutta, where it blossoms in April. (Flora Indica, p. 37.)

XXXII.

CARDAMOM, GREATER SEEDS OF. *Kakúlé Kibbār* قاقلة كبار (Arab.) *Hil kelan* هيل كلان (Pers.) *Burrie eelātchy* بري الاچي (Hind.) or *Desi*

elachi (Hind.) *Cardamongoo* (Port.) *Kapulaga* (Malay, Jav. and Bali.)

AMOMUM GRANUM PARADISI (Lin.)

Cl. and Ord. Monandria, Monogynia. Nat. Ord. Scitaminæ (Lin.) *Paradies ingwer.* (Nom. Triv. Willd.)

What has been called the grains of paradise seeds, or *greater cardamoms*, are much larger than the foregoing, more pungent, and less aromatic; they are rarely exported from India or Ceylon.

In what respects the plant producing the greater cardamoms differs from the *elettaria cardamomum*, I cannot say. *Willdenow*, in speaking of the *amomum granum paradisi*, says, "Scapo ramoso laxo, foliis ovatis, planta etiamnum obscura*, habitat in Madagascar, Guinea, et Zeylona, in umbrosis uliginosis ad radices montium." (Spec. Plant. vol. i. 4. 11.) Dr. Francis Hamilton, in his Account of Nepaul, speaks of a large kind of *cardamom* he found there, as yet not described by botanists. (See his work, p. 74.) The dose of the *tinctura cardamomi* is from one to three drachms, that of the *tinctura cardamomi composita* from one drachm to half an ounce.

The Arabians place cardamoms amongst their cardiaca.

XXXIII.

CARP, COMMON. *Sayl kundé* கோலகண்ட (Tam.) *Sayl* سيل (Duk.) *Tambara* (Malay.)

* See Syst. Lin. Cur. Willdenow, vol. i. part i. p. 9.

Suhree سهري (Hind.) *Ghénday lampa* (Tel.) *Rahoo* (Sans.) *Kool* كول (Arab.) *Carpe* (Fr.)
CYPRINUS CARPIO (Var.)

This species of cyprinus * is to be met with in many of the slow running rivers and ponds of Lower India, and is much prized both by Europeans and natives in spite of its numerous bones. The carp is noticed by Dr. Pearson in his Materia Alimentaria, as being at once sweet and nutritious: it is best stewed. Dr. F. Hamilton, in his Journey through Mysore, Canara, and Malabar, informs us, that he found in a clear stream, called the *Vedaivati*, near the village of *Heriuru*, three species of cyprinus (carp), which he scientifically described.† Their names, 1. *Karmuka* (Tel.), cyprinus carmuka (Buch.); 2. *Kincla minu* (Tarn.), cyprinus ariza (Buch.); this in Telingoo is *arija*, and in Bengalese *bangan batta;* 3. *Bendelisi* (Tel.), cyprinus bendelisis (Buch.) The first of these is about three feet long, the second a foot long, and the last not longer than the finger.

The cyprinus was well known to the ancients, and is noticed by Pliny. (Nat. Hist. lib. xxxii. cap. 11.) The physicians on the Continent recommend broth made of carp fish in consumptive cases.

XXXIV.

CARROT. *Cārrot kálung* கரட்டுக்கிழங்கு (Tam.) *Gazerragédda* (Tel.) *Gajur* گاجر (Duk.

* Beckman seems to have clearly proved that our carp was the cyprinus of the ancients; he supposes that this fish was first found in the southern parts of Europe, and conveyed thence to other countries. It was by all accounts not known in England in the eleventh century. (History of Inventions, vol. iii. p. 133.)

† See his work, vol. iii. pp. 344, 345.

and Hind.) *Jezer* جزر (Arab.) *Zerdek* زردک (Pers.) गृञ्जन (Sans.) *Carotte* (Fr.) *Karotte* (Ger.) Δαυκος (Greek.)

DAUCUS CAROTA (Lin.)

Cl. and Ord. Pentandria, Digynia. Nat. Ord. Umbellatæ (Lin.) *Gemeine morrübe.* (Nom. Triv. Willd.)

Carrots, which in the low provinces of the southern parts of the Peninsula, are only reared in the gardens of Europeans, and in those of a few rich natives, are cultivated in great abundance in the Mahratta and Mysore countries, where they are of a very fine quality, and are much eaten by the inhabitants.

The Arabians place carrots amongst their *Mobehyāt* (Aphrodisiaca), a proof that they never could have supposed them to be indigestible, which they have been by some reckoned; the fact is, when well boiled, they are of peculiarly easy digestion, and very nutritious; they are employed by European practitioners in the form of a poultice to correct the discharge of ill-conditioned sores. In Europe, the seeds which are carminative and diuretic, were believed at one time to be efficacious in gravel, given in doses of half a drachm bruised; and the red flowers in the centre of the umbels were formerly prescribed in epilepsy. Carrots appear to have been first introduced into India from Persia. Pliny tells us (b. xxv. c. 9.), that the finest kinds of carrots were, in his days, supposed to be those of Candia and Achaia. In England they would not seem to have been known previous to the reign of Elizabeth. Celsus mentions that the seeds of the carrot of Crete were an ingredient in the famous mithridate, which secured the body against the effects of poison. (Lib. v. pp. 231, 232.)

XXXV.

CASSIA LIGNEA, or CASSIA BARK. *Lawanga puttay* (Tam.) *Ilavanga* (Máléālie.) त्वच (Sans.) *Mookalla* (Cyng.) *Seleekeh* سليخه (Arab.) *Tuj* تج (Hind.) *Darchinie* دارچيني (Duk.) also *Mota darchinie* (Duk.) *Houtkassie* (Dut.) *Cassia lenhosa* (Port.) *Kayū-manis* (Jav.) *Kayū-legi* (Malay.) *Kayu-mānis* (Bali.) *Sing rowla* (Nepaul.) *Casse* (Fr.) *Casia* (Ger.)

LAURUS CASSIA (Lin.)

Cl. and Ord. Enneandria, Monogynia. Nat. Ord. Oleraceæ (Lin.) *Cassien lorbeer.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. ii. p. 477.

This bark, the odour of which is very like that of cinnamon, but fainter, is a favourite medicine of the Mahometan as well as Tamool medical practitioners, who consider it as a grateful and useful stomachic and cordial; and the bark of the root is little inferior in aromatic virtues to cinnamon itself. Great part of the *cassia* bark that is met with in India, is brought from Borneo *, from Sumatra (chiefly produced in the Batta country, inland from *Tappanooly*), and from Ceylon; it is also a natural product of Lower Hindoostan, as the tree grows in the woods of *Canara* † and *Malabar*, in which first-mentioned country it has got the name of *ticay*; and Dr. *Buchanan* thinks, that with cultivation it might be rendered equal to the China article.

* See Capt. D. Beckman's Voyage to Borneo.

† See Dr. Buchanan's Journey through Mysore, Canara, and Malabar, vol. iii. pp. 59. 161, &c.

Colonel Kirkpatrick saw the plant thriving in *Nepaul*, where it is called *sing rowla;* it is common on Ceylon, and was there distinguished by *Burman* by being termed "Cinnamomum perpetuo florens, folio tenuiore acuto." It is the *carua* or *carna* of *Rheede* (Mal. i. p. 107.), and grows to the height of fifty or sixty feet, with large spreading horizontal branches almost as low as the earth, and leaves triple-nerved and lanceolate. It would appear that it has lately been found growing on the *Himalāya* mountains.

Cassia bark may, generally speaking, be known from cinnamon by being thicker in substance, less quilled, it breaks shorter, and is more pungent to the taste. *Avicenna* tells us, that the best in Arabia is considered to be the red; the worst, the black; the leaves the Arabians call *sādudge* سادج (See Avicen. 218.), and place them, with the bark, amongst their *Mokewyat-dil* (Cardiaca.) The narrow-pointed eliptical leaves of the *laurus cassia*, as well as the oblong, ovate, shining leaves of the cinnamon tree, are sold in the Indian bazars under the names of *lawangapátery* (Tam.), and *tejpat* (Hind.), from a notion that they are only the leaves of the *laurus cassia*. They are, when dried and powdered, prescribed by the native doctors, in cases requiring stimulants and cordials. In *commerce* these leaves are called *Folia Indica* or *Malabathra*, a name, however, which more especially applies to the leaves of the laurus cassia. Dr. F. Hamilton, in his excellent Account of Nepaul, informs us, that he found in that country the leaves of the *laurus japonica* of Rumphius, sold under the name of *tej-pāt:* they were aromatic in taste and smell, but differed widely from the *tej-pāt* of *Rangpour*. (See his work, p. 84.) The tree is the *sinkauri* of the Hindoos.

Cassia buds have got the following names in India: *Lawanga thooler* also *Sirnagapoo* * (Tam.) *Naghéchéraloo* (Tel.) नागकेशर (Sans.) *Tejpat ka konpul* (Hind.) *Kubab-chinie*† كبابچيني (Duk.) *Kassielblomen* (Dut.) *Flores de cassia* (Port.)

They are of a dark brown colour, and somewhat resemble a nail in shape, with a round head surrounded with the hexangular calyx, which gradually terminates in a point. With them the vytians and hakeems (Mahometan doctors), prepare a stomachic infusion, one of their favourite remedies in many complaints.

This species‡ of laurus, with seven others, are growing in the botanical garden of Calcutta, all oriental plants, but two of them only natives of India. Of the essential character of the genus, Willdenow says, "*Cal.* o. calycina, 6 partita. *Nectarium* glandulis tribus, bisetis, germen cingentibus. *Filamenta* interiora glandulifera. *Drupa*, 1. sperma."

XXXVI.

CASSIA FISTULA. *Konnekāi* also *Sārákonnékai* கொன்னைமரக்காய் (Tam.) *Amultas* املتاس (Duk. and Hind.) *Khyar shémber* خيار شنبر (Arab.) *Khyar chémber* خيار چنبر (Pers.) *Dranguli* (Jav.) also *Toong-gooli* (Jav.) *Rayla-kāiā* (Tel.) *Mentus* (Malay.) *Suvărnăká* सुवर्णक (Sans.) *Cakay* (Can.)

* A name probably taken from *Sirinagur*, the capital of Cashmere.

† The same name is given in Hindoostanee to *Cubebs*.

‡ Both Pliny and Galen (De Med. Simp.), speak of cassia as distinct from cinnamon; the first especially mentions, that it grows in mountainous situations, and alludes to it "crassiore sarmento." (See lib. xii. cap. 19.)

Ahilla (Cyng.) *Pykassie* (Dut.) *Cassia purgante* (Port.) *Sonali* (Beng.) *Casse* (Fr.) *Rohnkassie* (Ger.)

CASSIA FISTULA (Lin.)

Cl. and Ord. Decandria, Monogynia. Nat. Ord. Lomentaceæ (Lin.) *Rohrenfruchtige cassie.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. ii. p. 18.

The *cassia fistula pulp* is considered by the native practitioners of India, as a most valuable laxative, and is prescribed by them in the form of an electuary, (in doses of two or three drachms), in cases of habitual costiveness. The beautiful, long, pendant, yellow, fragrant flowers of the tree, are also given in decoction, in certain affections of the stomach. The fruit (which is common in most bazars), is a brownish-coloured pod, about the thickness of the thumb, and nearly two feet in length; it is divided into numerous cells (upwards of forty), each containing one smooth, oval, shining seed. The pulp of the fruit is somewhat viscid, and of a sweet mucilaginous taste.

The tree is a native of India and also of Ceylon. (Flor. Zeyl. 149.) In Upper Hindoostan it is called *sundaraj* (Hind.) It is the *conna* of *Rheed* (Hort. mal. i. p. 37. t. 22.), and rises frequently to the height of fifty feet, with leaves pointed, and of a singular pale green colour, and flowers of a golden tinge, placed on long pendant, terminal spikes. The reader may find it well described by *Rumphius.* (Amb. 2. p. 83. ta. 21.)

Cassia fistula appears to have been long known in eastern countries. Avicenna speaks of it under the name of خيا چنبر (p. 271.), and we find it mentioned by *Serapio*, under the appellation of *eiarx amber.*

*Prosper Alpinus** notices the tree in his work "*De Plantis Egypti,*" and at the same time speaks of its sweet-smelling flowers. The modern Arabs place *cassia* fistula amongst their *Moosilāt sūfra* مسهلات صغر (Cholagoga.) *Virey*, in his "Histoire Naturelle des Médicamens," (p. 276.), observes, that the *cassia emarginata* of the *Antilles*, and the *cassia marilandica*, both purge like senna, and that the root of the *cassia occidentalis* of America, is aperient and diuretic. No less than thirty-four species of cassia were growing in the botanical garden at Calcutta in the year 1815, all of which (six or seven excepted), are oriental plants.

XXXVII.

CASTOR. *Ash-butchegān* اش بچکان (Arab.) *Goondbeyduster* گندبیدستر (Pers.) *Beevergeil* (Dut.) *Castoreo* (Port.) *Castoreum* (Fr.) *Kastoreum* (Ger.)
CASTOR. Fiber. (Jonst. Quadr. p. 147.)

Castor appears to be known only by name to the Mahometan doctors of the lower provinces of India; in the more northern tracts of Hindoostan, it may be presumed, that it is occasionally met with, as I perceive it has a place in the *Ulfaz Udwiyeh*. The Arabians consider it as hot, dry, attenuant, and diaphoretic, and sometimes call it جلد منستر *jild menáster*.

Castor is procured from the beaver, an amphibious quadruped common in the northern parts of Europe, Asia, and America, and is contained in the two largest of four follicles, situated betwixt the anus and external genitals of the animal: it feels slightly unc-

* Cap. ii. lib. c.

tuous, and is of a dusky brown colour, having a heavy but somewhat aromatic smell, not unlike musk, and a bitter, nauseous, and sub-acrid taste. It is considered as antispasmodic and emenagogue, and has long been recommended in Europe in low fevers, epilepsy, hooping-cough, hysteria, and nervous affections (in doses of from eight grains to a scruple). Celsus prescribed castor and pepper combined in cases of tetanus. (Vide Cels. lib. iv. cap. 3.)

Pliny informs us, that in his days the best castor was brought to Rome from Galatia and Africa; and that it was considered as a useful medicine in soothing and procuring sleep, and in cases of tetanus. (See his Natural History, lib. xxxii. cap. iii. p. 394. also lib. xxxii. cap. viii. p. 413.) Celsus recommends it as one of the things that might be smelt to rouse from lethargy, and also proposes it as one that may be poured into the ear in cases of deafness. (See Celsus, lib. vi. p. 316.)

XXXVIII.

CATECHU. *Cutt* (Can. and Hind.) *Cachou* (Fr.) *Katechu* (Ger.) *Catch* (Port.)
ACACIA CATECHU (Willd.)

Cl. and Ord. Polygamia, Monœcia. Nat. Ord. Lomentaceæ (Lin.) *Catechu acacie.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. iv. p. 1079.

This extract was formerly known by the name of *Terra Japonica*, and was supposed to be an earthy substance brought from Japan, a mistake that has been corrected by Mr. *Kerr* *, who ascertained that

* See Dr. Fothergill's works (vol. ii. p. 296.), also Dr. Buchanan's Journey through Canara, &c., vol. iii. p. 177.

it was obtained by boiling and subsequent evaporation, from the brown-coloured and inner part of the wood of the *acacia catechu*, which grows in the forests of *Canara* and in *Behar*; in the first mentioned country the tree is called *kheirie*, and in *Behar*, *kūira*, also *khayer* (Hind.) In *Coorgh* it has got the name of *cagali*; the Sanscrit appellation of it is *khadira*; the Cyngalese, *khéhiree*; and the Tellingoo, *podœl-maun*.

There are two sorts of catechu now exported from India to Europe, a pale kind from *Bengal*, and another of a yellowish brown colour from *Bombay*; the first being the produce of Canara, the second of Behar. It would appear from experiments made by Dr. Davy, that there is but little difference betwixt the two varieties; either is almost entirely soluble in the mouth, their solutions in water inodorous, and slightly red in tincture of litmus. From 200 grains of the Bombay catechu, Dr. Davy procured 109 of tannin, 68 of extractive matter, 13 of mucilage, and 10 of earths and other impurities. The same quantity of Bengal catechu afforded 97 of tannin, 73 of extract, 16 mucilage, and 14 impurities. Besides these two sorts of Indian catechu, I must observe that this extract is also, by Colonel Kirkpatrick's account, an export from Nepaul.*

Catechu is well known to be a very valuable medicine: its taste is more or less bitter and astringent, with at the same time a certain mawkish sweetness. It has long been considered in Europe as one of our best and safest astringents, and employed with advantage in cases of *fluor albus*, *gleet*, dysentery, and diarrhœa, in doses of from ten grains to two scruples or more.

* See Col. Kirkpatrick's Account of Nepaul, p. 205.

Besides the true catechu, there are sold in many of the bazars of Lower India, two other substances which are similar in their properties to it, and are used for the same purposes by European as well as native practitioners. The first is called *cuttacamboo* in Tamool, *kanser* in Tellingoo, and *crabcutta* in Dukhanie, also *achacutta;* the second is called in Tamool, *cashcuttie.* These are two different preparations or extracts from the nut of the *betel-nut tree* (areka catechu.) The *cuttacamboo* (Tam.) is brought of the first quality from Pegu; it is of a light brown colour, slightly bitter taste, and is powerfully astringent.* The better sort of natives chew it with their *betel leaves.* The *cashcuttie* (Tam.) is of an inferior quality, it is almost black in colour, hard, extremely bitter, and is much less astringent than the *cuttacamboo*; the poorer sort of natives chew it with their *betel leaves;* a great deal of this last kind comes to India from *Acheen,* but is also an export from Pegu. Both the *cuttacamboo* and *cashcuttie* are now made, but of inferior quality, in Mysore, and are prescribed by the Vytians in bowel complaints, and are also used by them as an external application in cases of the bad ulcer they call *pooderie panāshee* or sphacelous ulcer; a common and most destructive affection in India, but which, as the author of this work had some years ago the good fortune to discover, could be instantly arrested in its progress by the external application of the balsam of Peru. †

It may be proper before concluding this article, to say something respecting the tree which yields

* It is this substance which has long been confounded with the *real catechu* of the *acacia* catechu.

† See an account of the use of the external application of the balsam of Peru in sphacelous and phagedenic affections, in Nos. I. and II. of the Asiatic Journal for January, 1816.

the catechu. It grows in great abundance in the woods of *Kanhana*, and seldom exceeds twelve or fourteen feet in height, covered with a rough, thick bark, and towards the top dividing into numerous branches, on the younger of which the leaves are placed alternately, and are composed of fifteen or thirty pairs of pinnæ, about two inches long, each having nearly forty pairs of leaflets beset with small hairs: the flowers are hermaphrodite and male, and the fruit a lanceolate, compressed, smooth pod.

XXXIX.

CHALK. *Simie chúnámboo* சீமைசுண்ணாம்பு (Tam.) *Velāitie chunna* ولايتي چونا (Duk.) *Sima soonum* (Tel.) *Tyn abyaz* طين ابيض (Arab.) *Gil sifid* گل سفيد (Pers.) *Khurrie muttie* (Hind.) *Ratta hoonoo* (Cyng.) *Capoor engrees* (Malay.) *Craie* (Fr.) *Kreide* (Ger.)

CARBONAS CALCIS. CRETA ALBA (Edin.)

The chalk that is met with in India is brought from England, or perhaps from some of the islands of the Mediterranean Sea, where it is *found.* * *Dr. Heyne*† tells us, that he observed a chalk of a yellow colour in his tour from *Samulcotah* to *Hydrabad*, which effervesced strongly with acids but did not stick to the tongue, and was too hard to mark with, having therefore, it would seem, little affinity with the red chalk got in *Hessia* and Upper Lusatia, so valuable for making crayons, and which we know, is reckoned amongst the iron ores; it is the *reddle* of Jameson and the *roethel* of Werner. I have been informed

* It is found in Crete (Candia), and hence some suppose its name is derived. (See Jameson's Mineralogy, vol. ii. p. 128.)

† See Heyne's Tracts on India, p. 272.

that a sort of red chalk is occasionally picked up in the upper provinces of India, and that the Sanscrit name of it is *geireya*. Chalk will be farther noticed in another part of this work.

In speaking of *creta*, Celsus says, "Simul reprimit et refrigerat, sanguinem supprimit." (See Cels. lib. ii. p. 93, also lib. v. p. 206.)

XL.

CHAMOMILE FLOWERS. *Chāmaindoo poo* சாமந்திபூ (Tam.) *Babooné ka phool* بابو نیکا پھل (Duk.) *Ehdaklmirzie* احداق المرضي (Arab.) *Babooneh gaw* بابونه گاو (Pers.) *Camomille Romaine* (Fr.) *Camomilla Romana* (Ital.) *Roemische Kamillen* (Ger.) Ανθεμις (Greek.)

ANTHEMIS NOBILIS (Lin.)

Cl. and Ord. Syngenesia Superflua. Nat. Ord. Compositæ Discordeæ (Lin.) *Romische chamille.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. iii. p. 2180.

Chamomile flowers are occasionally brought to India from Persia, where they get the name of *babuneh** from growing near the village of *Babuniah* in Irac Arabi; they are also occasionally cultivated in Hindoostan in the gardens of wealthy Mahometans; but they do not appear to be used medicinally by the native practitioners. The Arabians and Persians give them a place amongst their *Muluttifat* ملطفات (Attenuentia), *Mudorrat* (Stimulantia), and *Moheli-tat* (Discutientia). The herb is the ανθεμις of Dioscorides, and the ανθεμον of Theophrastus.

* See Bibliothèque Orientale par D'Herbelot, p. 147.

The pleasant smelling, bitter, aromatic, and slightly warm flowers of the anthemis nobilis, which is too well known to require a description here, have long been considered as a valuable medicine by the medical men of Europe. They are supposed to be tonic, carminative, and to a certain degree anodyne, though a strong infusion of them operates as an emetic; the ancients considered them to be diuretic and useful in nephritic complaints. They have been chiefly employed in intermittent fever, dyspepsia, chlorosis, and flatulent cholic, and also in preparing antiseptic fomentations and anodyne injections. The infusion and extract are supposed efficacious in cases of obstructed menses; the dose of the latter is from ten grains to a scruple; the powdered flowers have been given in doses of from half a drachm to a drachm and a half.

There was but one species of anthemis growing in the botanical garden of Calcutta in 1814, the anthemis cota, a native of Southern Italy. Dr. R. James has written quite an eulogium on the virtues of chamomile. Boerhaave considered it is as highly efficacious in worm cases; and Mr. Phillips seems to be of opinion, that no simple of the Materia Medica, is possessed of a quality more friendly to the intestines. (See his work on Cultivated Vegetables, vol. i. p. 139.)

XLI.

CHARCOAL. *Adápoo cúrrie* அடுப்புக்கரி (Tam.) *Lippe anghooroo* (Cyng.) *Poi-bogooloo* (Tel.) *Khoyla* کویلا (Duk. and Hind.) *Arang* ارانغ (Malay.) *Fuhm chobie* فحم چوبي (Arab.) *Ze-*

gāl chobie زغال چوبي (Pers.) *Charbon de bois purifiè* (Fr.) *Reine kohle* (Ger.) *Carbon de lena* (Span.) CARBO LIGNI (Lond.)

I cannot find that charcoal is used as a medicine by the native Indians; like other nations they employ it in the preparation of gunpowder, and have some singular notions respecting it, supposing that obtained from particular trees, to be best suited for particular purposes; for instance, the goldsmiths in Lower India prefer the charcoal got from the *ossilin márám* and *avary márám* (cassia auriculata); the blacksmiths in the northern circars, say, that the best for their work, is that prepared from the *sanra chettoo* (Tel.), a species of mimosa, and which in all probability, differs little from that made from the *paramba* of the Canarese, mimosa tuggula (Roxb.), which the blacksmiths of Mysore commmonly use. In the Carnatic, the charcoal in the greatest request amongst the blacksmiths, is that of the *karoovelum márám* (acacia Arabica), *poollium márám* (tamarindus Indica), and *vum-máray márám*, swietenia chloroxylon (Roxb.)

Charcoal has been found to correct the fœtid odour of putifrying animal and vegetable substances, and destroy the odour, taste, and colour of others. It is no doubt an antiseptic, and is sometimes prescribed internally to correct the putrid eructations of some kinds of dyspepsia; it has also been advantageously employed, when mixed up in powder, with boiled bread, or linseed meal and water, in preparing a poultice for foul ulcers and gangrenous sores. Charcoal will be found further noticed in another part of this work.

XLII.

CHINA ROOT. *Pâringay pūllay* பாரங்கி பூல்லை (Tam.) *Chob chinie* چب چيني (Duk. and Hind.) *China alla* (Cyng.) *Choob chiny* چب چيني (Pers.) *Esquina* (Port.) *China wortel* (Dut.) *Khusb sinie* خشب صيني (Arab.) *Squine* (Fr.)

SMILAX CHINA (Lin.)

Cl. and Ord. Dioecia Hexandria. Nat. Ord. Sarmentaceæ (Lin.) *China smilax.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. iv. p. 778.

This is a large, tuberous, knotty root, of a dark reddish, brown colour on the outside, and reddish white within. The native Indians, like the Japanese, suppose it to have considerable efficacy given in decoction in old venereal cases; the first especially, believe it to be of great use in what they call *maygum vāivoo,* a complaint in which the limbs are stiff and contracted. What is found in the bazars of the Peninsula is brought from China, where it grows in great abundance in the province of Onansi. The plant, however, I believe, is now cultivated in Upper India.* The Abbe Rochon, in his "Voyage to Madagascar and the East Indies," informs us, that the Chinese often eat this substance instead of rice, and that it contributes to make them lusty.

The China root has of late years been much neglected by European practitioners, though Woodville† seems to think favourably of it, from its containing

* See Remarks on the Husbandry and Internal Commerce of Bengal, p. 205.

† Medical Botany, vol. iv. p. 67.

a considerable share of bland nutritive matter; by Aikin's* account, a proportion amounting to half the weight of the root. Dr. Fleming, from his own experience in Bengal, says, that either as an auxiliary to mercury, or for improving the general health after the use of that remedy, he believes it at least equal to its congenor *sarsaparilla.*

Two drachms of the root have been given twice daily in a decoction of the same root, in cases requiring antiscorbutics and diaphoretics.

The smilax pseudo-china, *muheisa* (Hind.), is growing in the botanical garden of Calcutta, introduced from *Silhet,* by Mr. M. R. Smith, in 1810. It is the *cum-kong-cunn* of the Chinese who frequently use its roots in place of the true China root.

Ten other species are growing in the same garden.

Before concluding, it may be proper to add, that according to Willdenow, the generic character of smilax is,

Masculi, *Cal.* 6 partitus. Cor. 0

Feminei, *Cal.* 6 partitus. Cor. 0 *Stylus* 3 fidus. *Bacca.* 3 locularis infra. *Sem.* 2.

Browne, in his History of Jamaica, informs us, that the plant is common in the more cool, inland parts of that island; rising from a thick porous root, and climbing by a rather slender rigid stem to the top of the tallest trees; the root, which is often as thick as the arm, is crooked and jointed, with knots at each joint; and is held in great repute in Jamaica, where it is observed to be not inferior in quality to that of the East Indies; it is considered as of a very sheathing nature; sometimes it is found to yield a gum, which the natives call *tzitili,* and which they chew to fasten the teeth. The reader is referred to

* Aikin's Lewis Materia Medica, vol. ii. p. 331.

the work above mentioned, and to Barham's Hortus Americanus, (pp. 40. 198.)

CINCHONA, or PERUVIAN BARK, substitutes for,

CINCHONA LANCIFOLIA (Mutis.)

See article Febrifuge Swietenian in this chapter.

XLIII.

CINNAMON. *Kárrúwā pūttay* கருவாப்பட்டை (Tam.) *Kulmie darchinie* قلمي دارچيني (Duk.) *Darchinie* دارچيني (Pers. and Hind.) *Kúrúndū* (Cyng.) *Sănálinga putta* (Tel.) *Kāimanis* (Malay.) *Darasita* (Sans.) *Caneel* (Dut.) *Canella* (Port.) *Darsini* دارصيني (Arab.) *Canelle* (Fr.) *Kanohl* (Ger.) Κινναμον (Greek.)

LAURUS CINNAMOMUM (Lin.)

Cl. and Ord. Enneandria Monogynia. Nat. Ord. Oleraceæ. *Zimml lorbeer.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. ii. p. 477.

This fragant, pleasant tasted, and pungent aromatic bark, is a favourite medicine of the native practitioners of India, who consider it as tonic, cordial, and stimulant, and give it in doses of from eight grains to a scruple.

From the bark there is prepared by maceration in sea-water and then distilling with a slow fire, an essential oil, which on Ceylon is considered as of great efficacy as a rubefacient in cases of sprains.

The greater part of this aromatic bark which is brought to India, is the produce of Ceylon, where it grows in great abundance in many parts of the island; it is also now an article of trade from several

of the eastern islands, especially *Borneo*.* It is cultivated at *Quang-sy* in China, and of a very fine quality in the central mountains of *Cochin China*. (See Voyage a Pekin par M. de Guignes.) It has lately been found to arrive at tolerable perfection in sheltered† situations in Lower India; and De Comyn says, in his "State of the Philippine Islands," that the cinnamon plant is found in its native state in the interior of Peru, and when carefully cultivated not inferior to that of Ceylon (see work, p. 25.); and it is well known that the plant in the same dominions is quite common in the woods of Mindano. Nievhooff found it in China in the Province of Quangsi, in the year 1655.

There are ten varieties of cinnamon known on Ceylon, but of these the *Scholias* only bark four, *viz.* the *rasse kurundu*, *nai kurundu*, *kapuru kurundu*, and *cabette kurundu*, the first is reckoned the finest, and the *cabette* the worst.

The tree seldom rises above the height of fifteen feet; the leaves stand in opposite pairs on short petioles, and are from four to seven inches long, oblong, pointed, and tri-nerved; the flowers which are in axillary and terminal panicles, are white, but without odour.

The *laurus cinnamomum* with six other species are growing in the botanical garden of Calcutta; it is the *katu karua* of Rheed (Hort. Mal. 5. p. 105, t. 53), and is described in the Flor. Zeyl. 145, and Burm. Zeyl. (62, t. 27.)

Sintok, Dr. Horsfield tells us, in his "Account of Java Medicinal Plants," is the Java name of a spe-

* See Leydan's Sketches of the Island of Borneo, vol. vii. Transactions of the Batavian Society.

† At Courtalum in the Tinnivelly district.

cies of *laurus*, which in taste is an agrecable aromatic mixture of the clove and cinnamon; the best comes to Java from the Moluccas.

It would appear that cinnamon was in former times not confined * to Asia, much less to the island of Ceylon. Pliny informs us (lib. xii. cap. 19), that it grew in Ethiopia, and we know "that Vespasian on his return from Palestine, dedicated to the Goddess of Peace in one of the temples of the capitol, garlands of cinnamon inclosed in polished gold; and that in the temple built on Mount Palatine by the Empress Augusta in honour of Augustus Cæsar her husband, was placed a root of the cinnamon tree set in a golden cup." (See Phillip's History of Cultivated Vegetables, vol. i. p. 152.) Celsus recommends that it should be given "per potionem." (lib. v. p. 261.) In the Philippine Island there is a tree called *calingad*, the bark of which tastes exactly like cinnamon. (See De Comyn's State of those Islands, p. 27.)

XLIV.

CLAY, POTTER'S. *Kāli munnu* களிமண் (Tam.) *Chicknie muttie* چکني متتي (Duk.) *Banka munnoo* (Tel.) *Krishna mirtika* कृष्णमृत्तिका (Sans.) ARGILLA FIGULI (Var.)

This is found in several parts of Lower India, but is more common in the higher tracts of Hindoostan; and is used for nearly the same purposes by the na-

* Hippocrates notices cinnamon, lib. ix. cap. 5. Theophrastus in his Hist. Plantar. lib. ix. cap. 5. So does Dioscorides, lib. i. cap. 13.

tives that it is in Europe. It varies in colour, being greyish, greenish, and sometimes of a blue cast, resembling in a great measure what has been called the *earthy potter's clay*, which is the *erdiger topferthen* of Werner. It feels a little greasy to the touch, and adheres strongly to the tongue: a finer kind of it, a sort of *pipe clay*, is also to be met with, and is what the different casts of Hindoos employ for making the distinguishing marks on their foreheads; and moistened with water, they often too apply it round the eye in cases of *opthalmia*, as well as round broken limbs, to keep them in their proper forms till the bones are knit. The Indian names of *pipe-clay* are the following: *namum* (Tam.), *khurrie* کھڑی (Duk.), *swĕtă mritika* श्वेत मृतिका (Sans.), *mukkool matie* (Cyng.) The slaty variety I have not seen in India. The English *potter's earth* analysed by Kirwan, consists of silica 63.00, alumina 37.00; and that of the best quality is found in Dorsetshire.

XLV.

CLOVE. *Crāumboo* கிராம்பு (Tam.) *Lāong* لونگ (Duk. and Hind.) *Warrala* (Cyng.) *Lăvăngă* लवङ्ग (Sans.) *Chankée* (Malay.) also *Buah lawang* (Malay.) *Lawangum* (Tel.) *Kerenful* قرنفل (Arab.) *Mykhék* میخک (Pers.) *Cravos da India* (Port.) *Kruid nagelon* (Dut.) *Thenghio* (Chinese.) *Wohkayu lawang* (Jav.) *Bu-wah-lawang* (Bali.) *Cloux de girofle* (Fr.)

EUGENIA CARYOPHYLLATA (Lin.)

Cl. and Ord. Icosandria Monogynia. Nat. Ord. Hesperideæ (Lin.) *Gewurznaglein tambusenbaum.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. ii. p. 965.

Cloves, which are the unexpanded flowers of the tree quickly dried, are brought to India chiefly from *Amboyna, Honimoa,* and *Moussalaut;* they are also a produce of the island of *Celebes* *, but those of Amboyna are reckoned the best; though small and black, they have a strong fragrant, aromatic odour, and a warm acrid and aromatic taste. The cultivation of the clove was introduced into Sumatra, by Mr. I. Lumsdain's Account, in 1778; but it would not appear to be well adapted to that island. (See Asiatic Journal for November, 1823.)

The native doctors of India employ cloves in such cases as require stimulating aromatics, in doses of from three to twelve grains. The clove tree, which was originally confined to the Molucca Islands, is now cultivated in many of the western parts of the Archipelago of India, where, according to Mr. Crawford, five varieties are distinguished. Rumphius, in speaking of the clove tree†, says, "it appears to me to be the most beautiful and precious of all known trees;" in form it resembles somewhat the laurel, with a smooth bark like the beech, and straight trunk; he adds, that it is not partial to large islands, and does not answer well at *Gelolo, Ceram,* and *Celebes.* Cloves, within the last fifty years have grown at the Mauritius, but of an inferior quality. The Eugenia caryophyllata is now thriving in the botanical garden of Calcutta; its Bengalie name is *chota*

* See Beckman's Voyage to Borneo.
† Herbarium Amboi. tam. ii. p. 1.

jamb. Twenty-seven other species of Eugenia are in the same garden.

The Arabians place قرنفل (cloves) amongst their *Mokewyat-meoadeh* مقويات معدة or tonics.

European practitioners occasionally order cloves in dyspeptic complaints, particularly in habits requiring a more than ordinary degree of stimulus. The clove is an article of the famous *electuarium gingivale* of the French Pharmacopeia for preserving the gums and teeth.

XLVI.

COCOA NUT, MILK OF. COCOA NUT, KERNEL OF. COCOA NUT, OIL OF.

Cocos Nucifera (Lin.)

Cl. and Ord. Monoecia Hexandria. Nat. Ord. Palmæ. *Gemeine kokospalme.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. iv. p. 400.

The first is a liquor contained within the kernel of the *cocoa nut* while it is yet growing, and is refreshing and extremely pleasant to the taste, particularly in hot weather. It may be drank to almost any quantity without injury, and is considered by the native doctors as a purifier of the blood. As the kernel approaches to maturity the liquor is diminished in quantity, becoming somewhat more sharp and a little aperient, in its best state it has the appearance of water with a small admixture of milk in it.

The kernel, which has much the taste of the filbert, is a common ingredient both in the curries of Europeans and natives; the latter considering it to be peculiarly nutritious, and to have the power of

rendering the body corpulent. By scraping down the ripe kernel of the *cocoa nut* and adding a little water to it, a white fluid is obtained by pressure, which very much resembles milk in taste, and may be used as a substitute for it. The cocoa nut tree is common almost every where within the tropics, and is certainly one of the most valuable in the world. It grows to a great height, the stems being composed of strong fibres like net-work, which lie in several laminas over each other, out of which come the branches or rather leaves, which grow twelve or fourteen feet long; but we will not enter into a minute description of the *cocos nucifera* here, but refer our readers to Roxb. Corom. I. p. 52. t. lxxiii. Of the genus, Willdenow says, "Masculi, *Cal.* triphyllus. Cor. tripetala. Feminei, *Cal.* 2 phyllus. *Cor.* 6 petala. Styl. 0. stigma fovea. *Drupa* fibrosa." Our species is distinguished by "inermis frondibus pinnatis, foliolis replicatis ensiformibus."

Its names in eastern countries are, नारिकेल *nārĭkēla* (Sans.), *taynga* தெங்கு (Tam.), *naril* ناريل (Duk.), *tenkāia* (Tel.), *tānghā* (Maléālie), *calappa* (Rumph. Amb. I. p. 1), *tenga* (Rheed, Mal. I. p. 1), *kalapa* also *nyor* (Malay), *narjible* نارجيل (Pers.)

According to Sprengel, in his Hist. Rei Herbariæ, the first particular notice taken of this tree is in "*Itinerario Abuzeid*" (Avicen. Relat. p. 2. iii.), wherein is especially observed the great variety of uses to which the different parts of this palm are applied. (See Hist. Rei, &c., pp. 268, 269.)

With regard to the oil of the cocoa nut (which in Tamul is *taynga unnay*, in Dukhanie *naril ka tayl*, in Tel. *tenkai monay*, and in Sanscrit नारिकेल *nārĭ-*

kailă). I have to observe that the vytians employ it in preparing certain plasters, and for softening the hair. In some parts of the Indian Peninsula it is used for culinary* purposes. In the more northern and eastern districts, it is chiefly employed for burning in lamps. In the Indian islands it would appear from Mr. Crawford's account, that it is for the pulp of the nut this palm is particularly grown, the oil made from it being there too expensive for burning, is almost entirely used for eating. The dried kernel of the cocoa nut (copra), is a great article of export trade from Canara. For cocoa nut toddy, see article toddy in this chapter. For some account of the nar, or fibrous husk of the cocoa nut, the reader is referred to Part ii. of this work.

XLVII.

COCHINEAL. *Cochineel poochie* கொச்சினில் பூச்சி (Tam.) *Kermizi faringhie* قرمز فرنگي (Duk.) *Conchenilje* (Dut.) *Cochenilha* (Port.) *Cochenille* (Fr.)

COCCUS CACTI.

The inferior sort of cochineal now prepared in India, was introduced by Capt. Neilson in 1795, who brought the insect from *Rio de Janiero ;* it was not at first known which insect it was, whether that producing the *grana fina cochineal,* or that which produces the *grana silvestra.* On discovering, however, that the little animal would neither eat the *cactus coccinellifer* nor *cactus tuna,* but voraciously devoured

* It is then prepared with great care by boiling the bruised kernels in water : for other purposes the oil is simply expressed.

the *cactus ficus Indica* (Lin.), *nágátállé-kulli* (Tam.), it was ascertained to be that from which the inferior or grana silvestra is prepared. The *grana fina* insect is known (or rather supposed) to feed only on the cactus coccinellifer. This, however, is much doubted by Baron Humboldt, at least he thinks the *grana fina* made by the Indians of *Oaxaca** may not be from that plant. The *grana fina* insect is nearly double the size of the *grana silvestra*†, and contains almost twice the quantity of colouring matter.

Cochineal has a heavy faint odour, and bitter austere taste; it has lately been recommended in Europe as an antispasmodic and anodyne in hooping cough, but I fear its virtues in that respect are not great. Scarlet was till of late years, produced exclusively with the colouring matter of cochineal, the nature of which, Mr. Brande informs us, has been investigated by M. Pelletier, who found it united in the insect with a peculiar animal matter, fat, and some saline substances, from which, by a chemical process, they succeeded in separating it, thereby procuring the pure colouring matter, which Dr. John has proposed to call *coccinellin*. The silvestra cochineal of Bengal when compared with the grana fina sort of South America, as to the relative quantity of colouring matter, was from 9 or 11 to 16. (See Tenant's Indian Recreations, vol. ii. p. 227.)

I mentioned above, that till of late years scarlet could only be produced by means of the cochineal insect; but it would appear that a more beautiful and

* See Baron Humboldt's Political Essays on the Kingdom of New Spain, vol. iii. pp. 70, 71, 72. Eng. Trans.

† Of late years, I understand, but little cochineal has been prepared in India, and no carmine has ever been yet made from it, the plants having been nearly all devoured by the insects.

lasting colour can be obtained by using the lac insect. (See another part of this work.)

XLVIII.

COFFEE. *Cāpie cóttay* காபிகொட்டை (Tam.) *Boond* بند or بوند (Duk.) *Bun* بن (Arab.) *Copi cottá* (Cyng.) *Kāwa* (Malay.) *Tochém kéwéh* تخم قهوه (Pers.) *Koffy* (Dut.) *Caffe* (Port.) *Chaube* (Turk.) *Eleave* (Egypt.) *Café* (Fr.) *Kaffe* (Dan.) COFFEA ARABICA (Lin.)

Cl. and Ord. Pentandria, Monogynia. Nat. Ord. Stellatæ. *Gemeiner coffe.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. i. p. 973.

This valuable berry was first used in the way it now is, in Arabia, in the ninth year of the *hegira* * (fifteenth century). The tree is properly a native of *Yemen*, where it is called *bun*, and where the fresh seeds are considered as diuretic and tonic; in other and more eastern provinces it has got the name of *kahivé*†, and in some parts *kischer*. It is now cultivated, however, with great success in the southern extremity of the Indian peninsula, in the *Mysore* country, in *Java*‡, and of a very superior quality in *Bourbon* and *Luconia*. (See De Comyn's State of the Philippine Islands, p. 22.) The coffee tree in India seldom rises higher than twelve or fourteen feet, and

* See Fothergill's works, vol ii. p. 286.

† See Niebhur's Travels in Arabia, vol. ii. pp. 228, 229.

‡ Particularly in the territories of *Cheribon* and *Jaccatra*. (See Sketches, Civil and Military of the Island of Java.) Mr. Crawford, in his Indian Archipelago (vol. i. p. 486.), tells us, that coffee was first introduced into Java in 1723, by the Dutch governor Zwardekroon.

is extremely beautiful; the leaves are from three to five inches long and about two broad, opposite, ovate-lanciolate, with waved borders, and of a singular glossy appearance; the flowers which are white, are produced in clusters at the base of the leaves, and have a pleasant odour. Our article, with two other species are growing in the botanical garden of Calcutta.

The Mahometans of India use a great deal of coffee in the same way that we do, with this exception, that they take no milk with it; they believe it to have the effect of soothing and allaying nervous irritability, and prescribe it to stop vomiting in *danklugna* دنكلگنه (cholera morbus); for a similar purpose it is often employed by the Spaniards at *Manilla*, and with the greatest success. There are various accounts of the first discovery of the virtues of coffee, and its introduction into use in eastern countries. *Niebhur* says it is a native of *Yemen;* Abbe Raynal, in his History of the East and West Indies, (vol. i. p. 336), informs us, that it was first noticed in Upper Ethiopia, and that a *Mollach* named *Chadely*, was the fortunate man, who found out its virtues in raising the spirits, tranquillizing the mind, yet keeping off sleep, and dissolving crudities in the stomach.

Coffee, by some medical men, is supposed to be more especially suited for those who are advanced in years. The abuse of it impairs digestion, and when too strong, it stimulates, heats, and produces watchfulness. As a medicine, it has been found useful in asthmatic affections, diarrhœa, and intermittent fever (see Dr. Pearson's Materia Alimentaria, p. 110); and some imagine it to possess the power of counteracting the narcotic effects of opium. (See Fischer de Potus Coffee Usu et Abusu.) My own opinion

is, that taken in moderation, not too strong, and without milk, it aids digestion, comforts the stomach, and calms the spirits. *Bun-kawa* is the Bengalie name of a wild kind of coffee, coffea Bengalensis, (Roxb.): it is an erect shrub, flowering in the hot season, and yielding its fruit in the cold season. Various substitutes are used for coffee in India, perhaps the best is toasted rice. In Europe, Mr. *Gray* informs us, that the seeds of the yellow water flag (iris pseudacorus), come nearer the real article than anything else that has yet been tried. (See his Supplement to the Pharmacopœias, p. 237.) Murray, in his Apparatus Medicaminum, notices as substitutes for coffee, common barley, the root of the cichori, or scorzonera, &c. (vol. i. p. 564, Latin edition.)

Within the last few years a great many people in England have had recourse to parched wheat and rye as substitutes for coffee: these were first, I believe, particularly recommended by Mr. Hunt; they are in their nature and qualities very similar to the article prepared with rice. As a beverage for the dyspeptic, those kinds of coffee, if they can be so called, are altogether safe, and I have met with several delicate women, who assured me that they found them agree with them better than the Turkey coffee.*

XLIX.

COLOQUINTIDA. *Peycōomutikāi* also *Varriecōomutie kāi* பேய்கோமுட்டிக்காய்

* It appears from the *Archives de Descouverts*, that a method has lately been discovered at Venice, of composing a fine unchangeable emerald green colour; a precipitation by means of pure soda from a decoction of decayed coffee in river water; the green thus obtained resists the action of acids, light, and moisture.

(Tam.) *Indrawunkaphul* اندراونكابهل (Duk.) *Makhal* (Bengalese.) *Pootsakāia* (Tel.) *Indrăvāruni* इन्द्रवारुणी also *Vishala* विशाला (Sans.) *Indrāin* اندرائن (Hind.) also *Indraini* (Hind.) *Hunzil* حنظل (Pers. and Arab.) *Bitterappelen* (Dut.) *Coloquintidas* (Port.) *Titta commodoo* (Cyng.) هندل also *Dahak* (Egypt.) *Makhal* (Ben.) *Coloquinte* (Fr.) *Coloquinter* (Dan.)

CUCUMIS COLOCYNTHIS (Lin.)

Cl. and Ord. Monoecia, Monodelphia. Nat. Ord. Cucurbitaceæ (Lin.) *Coloquinten gurke.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. iv. p. 611.

The plant which produces the coloquintida may be found in many parts of Lower India, particularly in sandy situations in the neighbourhood of the sea; the fruit is a greenish striped gourd or pepo, which, however, on ripening becomes of a pale yellow colour, and is about the size of an orange.

It would appear from what is said of this article in the "*Moofurdatee Secunder,*" that coloquintida is a Syrian word; the author speaks highly of the virtues of the medicine in cases of *sukkata* (catalepsy.) The vytians prescribe the bitter pulp of the fruit, dried, in cases requiring brisk and powerful cathartics. The Arabians and Persians place it amongst their *Mooselat belghém* مسهلات بلغم (Phlegmagoga.) To the pulp of the fruit, the Arabians have given the name of *shéhemhunzel* شحم حنظل the Persians that of *mughz hunzel* مغز حنظل The simple dried fruit the *Arabians* call *hudij* حدج the Persians *hunzel khoosk* حنظل خشک Dr. R. Pearson thinks colocynth is of so drastic and irritating a nature, that it is scarcely applicable in any other cases besides melancholy, lethargy, certain dropsical affections,

and worms. The dose of the dried pulp may be from four grains to eight or ten; that of the extract. colocynth. composit. is from five to fifteen grains. It is a powerful cathartic.

Many attempts have been made in Europe to correct the virulence of this medicine by acids and astringents, it may not therefore be superfluous to add here, that by Thunberg's account (Travels, vol. ii. p. 171), the gourd is rendered so perfectly mild at the Cape of Good Hope, by being properly pickled, that it is eaten both by the natives and colonists.

The coloquintida of the shops in Europe, though inodorous, has an extremely bitter and nauseous taste. It is brought from Turkey where the plant grows, but it is also, *Willdenow* says, a native of the Cape; and Gerarde tells us, that it is common on the shores of the Mediterranean Sea. Orfila places coloquintida amongst his poisons, and supposes its bad quality is equally in that part which is soluble in water, and not soluble. (See Traité des Poisons, vol. ii. part i. p. 18.) For the opinions of the Persians respecting coloquintida, the reader may consult a celebrated Persian work on the Materia Medica, by Secunder, entitled مفردات سكندري originally written in Syrian by Yahiakoort.

Our article, with nine other species of cucumis, grow in the botanical garden of Calcutta, all Indian plants, except the *melo*, which is a native of Persia. (See Hortus Bengalensis, p. 70.)

Burchell, in his Travels in Southern Africa (p. 126), informs us, that he saw a great many of the colocynth melons scattered on the ground near the *Breed* river, in the district of *Roodezand;* and we know that Burckhardt saw them lying in profusion on the ground in the desert of Nubia, called *Wadyom-gat.* (See his work, 4to. p. 184.)

Murray, in his Apparatus Medicaminum, (vol. i. pp. 587, 588), recommends colocynth in the form of tincture in cases of gout, rheumatism, violent headaches, and palsy, in doses of fifteen drops morning and evening.*

L.

COLUMBA ROOT. *Columboo vayr* கொலம்பு வேர் (Tam.) *Kalamboo khoo* (Cyng.) *Columbakejur* قلباكي جر (Duk.) *Kalumb* (Mosambiquée.) *Colombo wortel* (Dut.) *Raiz de columba* (Port.) *Colomba* (Fr.)

CALUMBÆ RADIX (Lond.)
MENISPERMUM COLUMBA (Roxb.)?†

The plant of which this is the root, was long supposed to be a native of Ceylon, and it was *Thunberg* ‡ who first declared that it was not so, but was brought to the town of Colombo from the coast of Malabar: there is no doubt but that its proper *Mosambique* name *Kalumb*, having been mistaken for Colombo on Ceylon, has led to this mistake.

It has been ascertained that the plant grows naturally, and in abundance, in the thick forests that are said to prevail about *Obio* and *Mosambique*, on the *Zanguebar* coast of Africa; a discovery we owe to a Mr. J. F. Fortin, a French gentleman settled at Madras, who brought to that place with him from Mo-

* We are told by Vauquelin in the Journal of Science, Literature, and the Arts (No. xxxvi. p. 400.), that colocynth treated with alcohol yields the bitter substance he has called the colocyntine which is slightly soluble in water.

† See Hort. Beng. p. 72.

‡ See his Travels, vol. iv. p. 185.

sambique, in September, 1805, an entire offset from the main root of a larger size than usual, from which a plant was raised in Dr. Anderson's garden at Madras; but the genus could not be determined from a want of female flowers. From a drawing in the possession of the Linnæan Society, it has been conjectured to be of the natural order of menospermæ, but I understand that Willdenow, from accounts he had received, supposed it to be a bryonia, and it is a certain fact that the root of the *Bryonia epigœa* (Rottler), resembles it much in its natural qualities. (See article *kolung kovay kalung* (Tam.), in Part ii. of this work.)

A plant discovered some years ago in America by Mr. Wm. Bartram, and termed *Fraseri walteri* has been found to possess similar virtues with the Madagascar plant; the root being a pure and powerful bitter, without aroma; it is of the class tetrandria, and ord. monogynia, and nat. ord. gentianæ; he has named it American Columba. (See Barton's Vegetable Mat. Med. of the United States, vol. ii. p. 109.)

Columba root is very subject to decay and become perforated by small worms; when good, it breaks with a starchy fracture, looks bright and solid, and has a slight aromatic odour and bitter taste. It is considered as a powerful antiseptic and tonic, and to possess astringent qualities, which have occasioned it to be often recommended in diarrhœa, general debility, cholera morbus, and in certain stages of phthisis; it has also been supposed to be efficacious in allaying nervous irritability, and strengthening the digestive organs. It is no doubt an excellent medicine, and may be given in powder, in doses of from fifteen grains to half a drachm, though we think the infusion is the best preparation; this is very mucilaginous, a

quality to which, perhaps, the root owes much of its virtue. For further particulars see Dr. A. Berry's account of the male plant, which furnishes the medicine called columba root in England, as it appears in the tenth volume of the Asiatic Researches.

I perceive by the Hort. Bengal. (p. 72.), that the plant whose root is the officinal columba root, was growing in the botanical garden of Calcutta in 1814, under the scientific name of *menispermum columba* (Roxb.), cl. and ord. dioecia, pentandria. Columba root is not unfrequently employed by the French and Portuguese in preparing the famous *droga amara* when the *créyat* plant cannot be procured. (See article Creyat in this chapter.)

LI.

CONESSI, or OVAL-LEAVED ROSEBAY. *Véppāléī* (Tam.) *Códágá pāla* (Mal.) *Pala codija* also *Manoopālā* (Tel.) *Curayia* also *Curaija* كرايجا (Hind.) *Cheeree* also *Kutāja* (Sans.) *Conessie* (Fr.)

NERIUM ANTIDYSENTERICUM (Lin.)

Cl. and Ord. Pentandria, Monogynia. Nat. Ord. Contortæ (Lin.) *Ruhrstillender oleander.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. i. p. 1236.

The bark of the oval-leaved rosebay having lately been admitted into the British Materia Medica, under the name of *conessi bark*, I have been induced to give the conessi a place here. The bark is called *palapatta* on the Malabar coast by the Hindoos, and *corte-de-pala* by the Portuguese; both of whom have long considered it as a valuable tonic and febrifuge.

On the Coromandel side of India it seems chiefly to be given in dysenteric affections, prescribed in decoction, to the extent of 2oz. twice or thrice daily. The milky juice of the tree is used as a vulnerary.

The seeds * which in Tamool are called *Véppāléi arisee*, in Persian *Ahir* اهر, in Arabic *Lissanul asafeer* لسان العصافير, in Dukhanie and Hindoostanie, *Inderjow* اندرجو and in Sans. इन्द्रयव *Indrăyăvă*, have a pleasant taste not unlike that of oats, which they also resemble somewhat in appearance; but are longer and more slender; an infusion of them, they being previously toasted, is prescribed as a safe and gentle restrainer in bowel complaints; the decoction, Rheed tells us, in his *Hortus Malabaricus*, is employed in ardent fever, as also in *gout* and worm cases.

The tree grows to a considerable height, with leaves about three or four inches long, and one broad, ovate, opposite, and pointed: it is the *codaga pala* of Rheede (Hort. Mal. 1. p. 85, 86. t. 47); it also grows in *Cochin China*, and in some parts of the Russian empire. It is the *echites antidysenterica* (Roxb.) who has given it the English name of Tellicherry bark.

LII.

CORAL. *Páválum* பவளம் (Tam.) *Pághádum* (Tel.) *Poālum* (Malay.) *Būbālo* (Cyng.)

* They are contained in round, slender, pendalous follicles, each about 9 inches long: two of which are often joined together at both ends. The seeds are covered with a kind of *coma* or downy tuft, somewhat resembling the down of the thistle.

Goollie گلي (Duk.) *Moonga* مونگا (Hind.) *Béséd* بسد (Arab.) *Merjān* مرجان (Pers.) *Vidrŭmă*, विद्रुम also *Prăbălă* प्रबाल (Sans.) *Koralen* (Dut.) *Coral* (Port.) *Corail* (Fr.)

CORALLIUM.

It has been said that red coral, the only kind employed in medicine in Europe, was no where to be found, but in the Mediterranean sea: it would appear, however, by Thunberg's account, that it is common in Japan, and there called *sangadin*, and I believe it is also found on the west coast of Sumatra; where corals of many different colours grow with great rapidity; the yellowish white*, however, is met with in the greatest plenty. As an ornament the black is most esteemed. De Comyn says, in his "State of the Philippine Islands," (p. 39.), that both the red and black coral are found near the islands *Samar* and *Bissayas* (see Travels, vol. ii. p. 240.) The red sort is the *gorgonia nobilis*, which according to Brande, is composed of a cartilaginous matter with carbonate and phosphate of lime, (see his Manual of Chemistry, vol. iii. p. 215.)

We learn from Niebhur (see Travels, vol. ii. p. 240.) that the Arabian Gulf is almost filled up with coral; in Europe the most profitable fisheries are those of Majorca and Minorca; on the coast of Sicily; and on the shores of Provence, from Cape de la Couronne, to that of *St. Tropez*. Coral has sometimes been employed as an absorbent. The Tamool practitioners prescribe it when calcined, in cases of *Neer*

* This, according to Brande, consists entirely of carbonate of lime, with a minute quantity of gelatinous matter. See his Manual of Chemistry, vol. iii. p. 214.

Alivoo (Diabetes), and *moola cranie* (bleeding piles). The Arabians place it amongst their *Kabizat* قابضات (Astringentia,) and *Mokéwyát-dil* مقويات دل (Cardiaca.)

Tavernier, in his Indian Voyages (book ii. chap. xx.) tells us that there are three places where coral is fished on the coast of Sardinia; viz. at Arguerre, at Boza, and at St. Peter: there are also fisheries on the coast of France, Sicily, Catalonia, and Majorca. Celsus notices corallium amongst those substances which harden the body, "Veratrum, album et nigrum, corallium, cantharides, pyrethrum, adurunt." (Cels. Lib. v. p. 208.) The *corallium album*, a hard, white, brittle, calcareous substance, is the nidus of the *madrepora oculata*, class vermes, order lithophyta; it is sometimes exhibited as an absorbent earth. The *corallium rubrum*, already mentioned, is a hard, brittle, calcareous substance, resembling the stalk of a plant, and is the habitation of the *isis nobilis*, class Vermes, order Zoophyta: it is given as an absorbent in powder, to children. What is called the *corallina Corsicana*, or Corsican worm seed, is the *fucus helminthocorton* of de la Tourette. This plant has got a great name for its power in destroying intestinal worms, and, according to Mr. Ure, the pharmacopæia of Geneva directs a syrup to be made of it.

LIII.

CORIANDER SEED. *Cóttamíllie* கொத்தமல்லி (Tam. and Tel.) *Mety* (Malay.) *Cotumbāroo* (Cyng.) *Dunya* (Hind. and Beng.) *Dhunnian* دھنیان (Duk.) धन्याक *Dhănyākă* (Sans.)

Kezereh كزبرة (Arab.) *Kishnēez* كشنيز (Pers.) *Dhāna* (Guz.) *Coriander* (Dut.) *Coentro* (Port.) *Cottimbiry* (Can.) *Coriandre* (Fr.) *Koriander Saamen* (Ger.)

CORIANDRUM SATIVUM (Lin.)

Cl. and Ord. Pentandria, Digynia. Nat. Ord. Umbellatæ (Lin.) *Gemeiver coriander.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol i. p. 448.

This is an annual, with an erect stem about two or three feet in height, having compound leaves, and white or reddish flowers. The fruit is too well known to require a description here.

The plant grows in abundance in many parts of India, where the seed is used by the natives as a carminative, grateful stomachic, and gentle stimulant; the dose from a scruple to a drachm. In Nepaul the plant is common, and is called *danga.* In Egypt, to which country it is carried from India, it is termed *kurbara shamie* كربرة شامي, Celsus, speaking of coriandrum, says, "coriandrum refrigerat, urinam movet. (See Cels. lib. ii. p. 90, 91.) Murray in his Apparatus Medicaminum, vol. i. p. 406., recommends an infusion of the seed, in cases of quartan ague; he further adds, "non spernendum ad flatus discutiendos, stomachum roborandum et diaphoresin movendam."

LIV.

COWHAGE. *Poonaykālie* പൂനക്കാലി (Tam.) *Peeliadugookāila* (Tel.) *Kiwách* (Hind.) *Kaunchkoorikébinge* ಕಾಂಚಕೂರಿಕೆಬಿಂಗೆ (Duk.) आत्मगुप्ता *Atmagŭptā* also कपिकच्छु *Kăpĭkăchliŭ* (Sans.)

Rawé (Jav.) *Kosambiliwail* (Cyng.) also *Dewīpaghura* (Cyng.) *Cowage* (Fr.) *Kuhkratze* (Ger.) DOLICHOS PRURIENS (Lin.)

Cl. and Ord. Diadelphia, Decandria. Nat. Ord. Papilionaceæ (Lin.) *Juckende faseln.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. iii. p. 1041.

The dolichos pruriens, which is a perennial, climbing plant, is a native of India as well as several other eastern countries, also of America; it is the *cacara pruritus* of Rumphius (amb. vi. p. 393. t. 142.), and the *nāi corana* of the Hort. Mal. (ix. p. 61. t. 35.)

A strong infusion of the root, sweetened with honey, is given by the Tamool doctors in cases of cholera morbus; but I do not find that the spiculæ of the pods are used by them as an anthelmintic; the pod, which is eaten by the natives like any other bean, is about four inches long, a little curved, and contains from 3 to 5 oval and flattish seeds; the outside of it is thickly covered with short, bristly, brown hairs, which, if incautiously touched, stick to the skin, and occasion intolerable itching. Syrup thickened with the hairs till it is of the consistence of honey, is prescribed by European practitioners as an efficacious remedy in most worm cases; particularly for expelling the round worm, *lumbricus teres.* The dose from one tea-spoonful (to a child) to 3 (for an adult) given on an empty stomach, to be continued for three days, and followed by a brisk purge. For further particulars respecting *poonaykalie* (Tam.) the reader is referred to the third part of this work: 20 species of *dolichos* were growing in the botanical garden of Calcutta in 1814. (See Hort. Beng. p. 35.) There is no doubt but that it is simply by their mechanical

effect that the hairs above mentioned act in worm cases; for as Mr. Murray has justly observed, "neque tinctura, neque decoctum inde paratum, eundem effectum praestat. (Appar. Medicam. vol. i. p. 441.)

LV.

CRAB, SEA. *Káddil Nūndoo* கடல்நண்டு (Tam.) *Dewipāghuroo* (Cyng.) *Cátán* (Malay.) *Gnándā* (Mal.) *Samudrapoo Nandrakāia* (Tel.) *Sindhŭ Kărkătăkă* सिन्धुकर्कटक (Sans.) *Diryaka-keynkra* دریاکاکھینکڑا (Duk.) *Keynkra* (Hind.) *Sirtan* سرطان * (Arab.) *Khérchéng* خرچنگ (Pers.) *Bras de crevisse* (Fr.) *Klaua an Krabbe* (Ger.) *Māundoo* (Maléalie.)

CANCER PAGURUS (Var.)

The crab that is commonly met with in India differs considerably from what is called the black-clawed crab in England; it is smaller and the claws are not so dark-coloured; yet at the proper season the crabs on the Coromandel coast, are excellent and much sought after by Europeans; no part of the crab is used by the natives in medicine. The Persians, it would appear, occasionally employ "crab's eyes," but more properly called crab's stones, as an absorbent, and give them the name of *cheshm sirtan;* but whether they are exactly the same with those of the shops in England, which are concretions found in the stomach of the crawfish, (*cancer astacus*) I

* This is more properly speaking the Arabic name for the crawfish. To the sea crab the Persians not unfrequently give the appellation of پنج پایه *punj-pāiyeh.*

cannot say. The crab's stones are said to be procured in the greatest abundance at Astracan.

LVI.

CRESSES, GARDEN. *Halim* هالم (Duk.) *Réshād* رشاد (Arab.) *Chúnser* چنسر (Hind.) *Túréh-tezuk* تره تیزک (Persian.) *Halim* (Beng.) *Cresson* (Fr.)

LEPIDIUM SATIVUM (Lin.)

Cl. and Ord. Tetradynamia, Siliculosa. Nat. Ord. Siliquosæ (Lin.) *Garten kresse:* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. iii. p. 435.

Garden cresses are rarely cultivated by Europeans in India; the common water-cresses, *sisymbrium nasturtium* (Lin.), are much prized and sought after by the Mahometans, who call them in Dukhanie *loot putiah.* Three species of lepidium grow in the botanical garden of Calcutta, our article and the *thlaspi* and *bonariense.* The thlaspi is, I believe, the lep. perfoliatum (Willd.) Spec. Plant. vol. iii. p. 431. Water-cresses, we are told by Mr. Crawford, were some years ago introduced into the eastern islands by the English, where they thrive in a most extraordinary manner, not only in the hills, but in the hottest plains. The European vegetables, he adds, which succeed best in that Archipelago, are peas, artichokes, and cabbages; carrots which grow so well in India, there do not thrive.

The Arabians place the seed of the garden cresses, which they call *hurrif* حرف amongst their *Mokerchat* مقرحات (Vesicatoria.)

LVII.

CREYAT. *Kiriāt* கிரியாதகு (Tam. and Can.) *Crëat* كريات (Duk.) *Kairātă* कैरात (Sans.) *Calapnath* (Hind.) *Kala-megh* (Ben.) *Nella-vemoo* (Tel.) *Attadie* (Cyng.) *Crèate* (Fr.)

JUSTICIA PANICULATA (Vahl.)

Cl. and Ord. Diandria, Monogynia. Nat. Ord. Personatæ (Lin.) *Rispenblutige justicie.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. i. p. 89.

This plant was first brought to the southern parts of the Indian peninsula, from the Isle of France, where it is highly prized as a stomachic and tonic, and forms the basis of the famous French bitter tincture, called *drogue amere.** Dr. Fleeming, however, in his Catalogue of Indian Plants, informs us, that it is also a native of Bengal. The whole of the plant is used in medicine, and is intensely bitter, a quality which it yields equally to aqueous, vinous, and spirituous menstrua; it is the *cara caniram* of Rheed. (See Hort. Mal. ix. p. 109. tab. 56.), and is now cultivated with success in Tinnevelly, as well as in some more northern districts, where it occasionally gets the name of *nella-vaymboo.* It seldom rises higher than a foot and a half, and is stiff and four-cornered; Vahl tells us that it may be distinguished from all

* This is much esteemed by the Portuguese inhabitants of India as a stomachic and tonic, a particular account of it may be found in an old work on the Diseases of Southern India, by a Portuguese writer *Fra Paolino da san Bartolamee,* it is there particularly recommended in the disease called, he tells us, *shani,* or *mordexin,* also *nicomber,* and which would appear by its symptoms to correspond with the spasmodic cholera of this day. The *droga-amara* is composed of mastic, thus, common resin, myrrh, aloes and creyat-root, for which last sometimes columba-root is substituted. Proper proportions of these being taken, the whole is steeped in a due quantity of brandy for a month together in the sun in dry weather, and then carefully strained and drawn off.

others of its genus, by having capsules, compressed, flat, and of the same breadth from end to end. For a description of the plant, see Flora Indica, p. 119. It is growing in the botanical garden of Calcutta, and would appear by Forskahl's account to be common in Arabia, and there called وزر Usăr. (See his "Descriptiones Plant. Floræ Ægyptiaco-Arabicæ," p. 4.)

LVIII.

CUBEBS. *Vâl méllághoo* வால்மெளகு (Tam.) *Cubāb chinie* کباب چینی (Hind.) *Dūmkê mirchie* دمکی مرچی (Duk.) *Komoonkoos* (Malay.) *Salava-mirrialoo* (Tel.) *Kebābeh* کبابه (Arab.) *Wal-gummeris* (Cyng.) *Sugandhă marichŭ* सुगन्धमरीच (Sans.) *Koebeben* (Dut.) *Cobebas* (Port.) *Kumukus* (Jav.) *Lada barekor* (Malay.) *Cubebes* (Fr.) PIPER CUBEBA (Lin.)

Cl. and Ord. Diandria, Trigynia. Nat. Ord. Piperitæ (Lin.) *Cubeben pfeffer.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. i. p. 159.

The piper cubeba is a native of Java*, where it is called *cumac*, and grows in great luxuriance in the woods near *tuntang*, and its produce thence sent all over Europe. It also grows in Nepaul†, and is there called *timmué* and *taizbul.* It is a very smooth shrub, with a jointed flexuous stem, and leaves mostly oblong, entire, and petioled. The cubebs of the shops

* See Sketches Civil and Military of the Island of Java.
† See Col. Kirkpatrick's Account of Nepaul, p. 79.

are the dried pedicelled berries, which grow in clusters on short, peduncled, solitary spikes, they are called *dumké merchie* in Dukhanie, from the spiky tail that is at the end of each grain. This pepper resembles the black pepper in size, but is somewhat wrinkled; in colour it is not quite so dark, and has less pungency, but not less of an aromatic odour.

Cubebs are used by the Indian practitioners as a grateful stomachic, carminitive, and seasoner: the Arabians place them amongst their مدورات *Mudorrat* (Stimulantia.) The Mahometans not unfrequently employ them in cases of gleet, and it would appear that of late years in Europe, this medicine has been considered as powerfully efficacious in gonorrhæa*. Mr. Henry Jeffreys has written on the subject; his work is entitled, Practical Observations on the Use of Cubebs in the Cure of Gonorrhæa. He speaks highly of the virtues of cubebs, though they would appear in some habits to occasion headache and nausea; they are given, he thinks, with the greatest success in the more inflammatory forms of the disease, nor is their use followed by any of those bad symptoms which occasionally succeed to other modes of treatment. He conceives the agency of cubebs to resemble in a great measure that of the balsam of Copaiva; they moderate, he adds, inflammation, and suppress the quantity of the discharge in a shorter time than any other remedy he is acquainted with. The common dose about half a drachm, or even a drachm or more, three times in the day, in the form of

* See Edin. Medical and Surgical Journals, for January, 1818, and January 1819, by Messrs. Crawford and Adams.

powder. Mr. Crawford * in his History of the Indian Archipelago, says, that they are given in Malay countries with success in much larger doses, three drachms, and repeated during the day, for six or eight times. Ten species of *piper* grow in the botanical garden of Calcutta, all oriental plants.

Besides the virtues of cubebs in gonorrhæa, it would appear to have been lately discovered to be a most useful medicine, administered in cases of inflammation of the *mucus membrane* of the intestinal canal, given in conjunction with oxyde of bismuth; also in cases of chronic inflammation of the Æsophagus in union with carbonate of soda. See Communications by Dr. J. Fosbrooke, in Number 102 of the Medical Repository, and in that for December, 1822. In Number 100 of the same useful publication, p. 347, the reader will find an account of the analysis of cubebs, by *M. Vauquelin*, by which they appear to contain, 1. a volatile oil, which is nearly solid: 2. resin, resembling balsam copaiba: 3. a quantity of another coloured resin: 4. a coloured gummy matter.

The German and other physicians on the continent, at the time that Murray wrote, (at Gottingen in 1790,) do not appear to have been at all aware of those virtues which cubebs have since been found to possess. The distinguished writer just mentioned, thinks they may prove serviceable in certain dyspeptic affections, and the vertigo consequent on such complaints. (See Appar. Medicam. vol. v. p. 38.)

* See his work, vol. i. p. 465.

LIX.

CUMIN SEED. *Sírágum* சீரகம் (Tam.) *Dooroo* (Cyng.) *Jeera* (Beng.) *Zira* زیرہ (Duk.) *Zira* زیرہ (Hind.) *Kemun* کمون (Arab.) *Zéréh* زیرہ (Pers.) *Jintan* (Malay.) *Gilakara* (Tel.) *Jīrăkă* जीरक or *ăjājī* अजाजी (Sans.) *Jeerágá* (Can.) *Komyn* (Dut.) *Cuminho* (Port.) *Cumin* (Fr.) *Ramischer Kumul* (Ger.) *Kummen* (Dan.) CUMINUM CYMINUM (Lin.)

Cl. and Ord. Pentandria, Digynia. Nat. Ord. Umbellatæ (Lin.) *Feinblattriger kreuzkummel.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. i. p. 1440.

Cumin seeds are in very general use amongst the native Indians, equally as a grateful stomachic in cases of dyspepsia, and as a seasoner for their curries: they have a peculiar heavy, strong odour, and a warm bitterish taste. The plant is an annual which seldom rises above eight or ten inches high; is, properly speaking, a native of Egypt, but is cultivated now in India, though I am inclined to think that the greater part of the seed found in the bazars, is brought from the sea ports of the Red Sea. The plant, however, is growing in the botanical garden of Calcutta, introduced from Persia.

In Malta, where cumin seed is very common, it is called *cumino aigro*, to distinguish it from anise-seed, which they term *cumino dolce*. Celsus tells us, that it is given with advantage in cases in which the spleen is affected, "præcipue ad id valet vel trifolii semen, vel cuminum, vel portulaca." &c. (See Celsus,

lib. iv. p. 183.) The French medical practitioners esteem these seeds as "*excitantes, carminatives et apéritives,*" and formerly considered them as diuretic and emmenagogue.* See Deslongchamp's "Manuel des Plantes," vol. i. pp. *255, 256.*

LX.

CROTON, PURGING SEED OF. *Nérvalum cottay* (Tam.) *Iumal gota* جمال گوٹہ (Hind. and Duk.) *Dund.* دند (Pers.) *Batoò* باتو (Arab.) *Naypalum víttíloo* (Tel.) *Iayapala* (Can.) *Nepala* नेपाल (Sans.) *Bori* (Malay.) *Népálam* (Cyng.), also *Dunti beeja* (Sans.) *Cheraken* (Jav.) *Croton* (Fr.)

CROTON TIGLIUM (Lin.)

Cl. and Ord. Monœcia, Monadelphia. Nat. Ord. Tricoccæ. *Purgier croton.* (Nom. Triv. Willd.)

These seeds, which were formerly known in Europe, under the name of *grana molucca,* are about the size of a small marble; and of a convex shape on one side, and bluntly angular on the other, enveloped in a thin shell; and are reckoned by the vytians amongst their most drastic purges; as such, they are frequently prescribed by them in maniacal cases, and on other occasions, when powerful cathartics are required. Their operation is rendered much less violent, when cleared of the thin filament in which each seed is closely enveloped; then, the vytians say,

* I have known the seed produce the happiest effects, when employed as an external application, in discussing indolent tumors in the form of a cataplasm.

69883

as much as one seed may be administered as a dose; though it may be safer to begin with a much smaller quantity, given intimately, blended with a little honey. My friend, Dr. Ingledew, informs me, that he gave this medicine in upwards of five hundred cases in the Mysore country, and found it a valuable and safe purgative; his dose was seldom more than one grain, combined with two of camphor. He would not recommend it as a safe purge for children under seven years old, nor for very old people, or delicate women. In the first edition of this work *, published at Madras, in 1813, I gave the sentiments of Dr. White, and Mr. Marshall, of the Bombay establishment, regarding the purging croton; and, perhaps, I cannot do better than repeat them now. Doctor White observes: —

"Take the seed of the croton tiglium, after having been each enveloped in a small ball of fresh cow-dung, about the size of a sparrow's egg, put them on some burning charcoal, and allow them to remain till the cow-dung is burnt or toasted dry, then remove them, and taking off carefully the shells from the seeds, pound the nuclei, and divide into pills, making two out of each grain; two, or at most three of which are a sufficient dose for an adult; half a drachm of honey, to two drachms of the mass provesa convenient medium for uniting it. The advantages derived from the above mentioned process, are, in the first place, it facilitates the removal of the shell; secondly, it renders the nucleus more fit for pounding; and lastly, the gentle torrefaction it undergoes, corrects in a great degree the natural acrimony of

* In that first edition I was at particular pains to call the attention of the medical men of the East to this medicine, from finding that it was highly prized by the Hindoo doctors, and extolled in various sastrums. See Work, pages 95. 292, 293, 294.

"the nut. The Tamool, Canarese, and Sanscrit "names of this nut, express its quality of liquefying "the contents of the intestines. An intelligent "*Ioqui* from Benares, tells me, that in his country, "they boil the seeds soft in milk, stripping them "first of their shells; after which they pound them, "forming the mass by means of lime juice, at the "rate of one pill from each seed; two of these making "an ordinary dose. A mode in Guzerate is still more "simple, consisting merely in pounding the kernels, "without any previous operation, and forming, by "means of honey, two pills from each nucleus, one "of which generally suffices for a strong purge; at "the same time directing a gill of warm water to be "taken immediately after swallowing the pill: in "this preparation the inherent acrimony of the "kernel, makes up for the smallness of the dose, "and the water drank above it ensures its speedy "operation.

"The following directions are from a learned "*Persee vydia*, of Surat.

"After having removed the shells from the seeds, "tie the kernels in a small piece of cloth, like a bag; "then put this into as much cow-dung-water as will "cover the bag, and let it boil; secondly, when "boiled, split the kernels in two, and take a small "leaf (filiment) from them, which is said to be poi- "sonous; and thirdly, pound the whole into a mass, "to which add two parts of *katha* (catechú), that is, "to one drachm of croton, add tw of *katha*, and "divide into pills of two grains each; two of which "are sufficient for one dose. The addition of the "*katha* is said to correct its acrimony altogether, "and to prevent any griping from ensuing."

(Signed) D. WHITE, M.D.

Mr. Marshall's sentiments on this subject, are the following: —

"As far as the employment of the croton nut, in "about two hundred instances, authorises me to "speak of its powers, I offer the following remarks "as the result of my observation; the cases were all "those of European soldiers.

"Two pills, in each half a grain of the mass, "given to a man of ordinary habit, produce a full "purgation, such as is necessary in usual practice, "in the beginning of fever; I esteem this dose as "equal in power, to half a drachm of jalap, or to six "grains of calomel. The operation is attended with "much rumbling of the bowels; the stools are inva- "riably watry, and copious. In about one case in "ten, the medicine caused griping, and in about "one in thirty, nausea; but it is very probable that "similar effects would have arisen in these cases "from the operation of any other purgative of equal "power. If the patient be weakly, one pill often "produces the effects above mentioned; but in a "healthy subject, the operation of one pill seldom "affords a motion in less time than six, eight, or "more hours. In a case of general torpor and coma, "I produced numerous stools (and not very watry) "with three pills. The chief advantage of this "purge is, the smallness of the bulk necessary to "obtain the desired effect. In the case of coma, "just noticed, it would have been next to impossible "to get the patient to swallow a sufficient quantity "of almost any other purgative. None of the "drastic purges are more certain, none so rapid in "their action, nor, I think, so little distressing by "griping or nausea. I found the dose of one grain "very useful in diseased spleen, where the patients

" were obliged to have their bowels daily emptied; " an omission of this precaution being almost inevit- " ably followed by a paroxysm of fever; by manag- " ing the exhibition of the medicine, so as to ensure " its operation an *hour* or two before the time of " the expected attack, it is almost certainly obviated.

" To the field surgeon, it is no unimportant re- " commendation of this medicine; that five hundred " doses may be contained in a small wafer-box, " and purchased for half a rupee."

(Signed) THOMAS MARSHALL, Assistant Surgeon. *Barrachie*, near *Surat*, Oct. 28. 1812.

The expressed oil of the seed called in Tamool *nérválum únnay*, is considered as a valuable external application in rheumatic affections; as a purge it has been of late years often resorted to in England, and is thought to have still more powerful effects as a hydragogue, than the torrefied seeds. Mr. Thompson tells us, that in some cases merely touching the tongue with a drop, has produced many loose stools; and in others, doses of one or two minims have excited the most frightful hypercatharsis; although some individuals have taken it to the extent of even ten minims without any very sensible effect; he adds, from his own experience, that he would be very cautious in exhibiting the oil at first in larger doses than one or two minims, to adults: in apoplexy, convulsions, and mania, the croton oil is likely to prove a medicine of great value; a very good mode of giving it, is, rubbed up with the mucilage of acacia, gum, sugar, and almond emulsion, by which means its acrimony is blunted.

The croton nuts were known to the Arabian physicians, by the name of *fill* فل (Serap. c. 261.), and were formerly brought to England under the name

of *molucca grains*. Rumphius informs us, that the root of the plant is supposed, by the inhabitants of Amboyna, to be a useful drastic purge, in cases of dropsy, given rasped in doses of a few grains, or as much as can be held betwixt the thumb and finger*, and the same writer quotes a letter from *Artus Geysels*, one of the Governors of Amboyna, expressive of similar virtues in the root, in such affections. The last mentioned gentleman thinks, the best way of giving the dose above mentioned, is the following: "Radix autem hæc radenda est, quo subtilius eo "melius ac mane cum vino vel potu arack adsumenda "est." On Java, the croton nut is well known, highly valued, and called by the Javanese *cheraken*. Rheede, who speaks of the plant under the name *cádél avánācú*, says, that the leaves rubbed and soaked in water also are purgative; and when dried and powdered are a good external application in cases of bites of serpents.† Virey in his "Histoire "Naturelle des Medicamens," tells us, that the French call these grains, *graines de tilly*, and that the light wood of the small tree, which they term *pavane*, is of a bitter quality, gently emetic, and very powerfully sudorific.‡

Of the essential character of the genus, Willdenow says. "*Masculi, cal.* cylindricus. 5. dentatus. *Cor.* "5. petala. *Stam.* 10. 15. *Feminei, cal.* polyphyllus. "*Cor.* 0. Styli 3. bifid. *Caps.* 3. locularis. *Sem.* 1. (Spec. Plant. vol. iv. p. 531.)

Our article is a small tree, with a few spreading branches, Willdenow observes of it, "Foliis ovatis "acuminatis serratis glabris basi biglandulosis, pe-

* Or it may be given in infusion in arrack.
† Rheede, Hort. Mal: ii. p. 61. t. 33.
‡ See his work, p. 301.

" tiolis folio brevioribus, racemis terminalibus." The *Flora Zeylanica*, informs us that it has " leaves ovate, " smooth, accuminate, serrate, with an arboreous " stem." The flowers are in erect, simple, terminating racemes, scarcely the length of the leaf; the lower ones female, the upper male, and pale coloured. The croton tiglium is a native of China, Cochin China, and India, and has been noticed by Laureiro and Gærtner, as well as those writers already mentioned.

No less than fourteen species of croton have been discovered in Jamaica, three of which, according to Lunan*, appear to be there considered as medicinal, viz. the *crot. liniare* (the powder of the dry leaves of which, Barham says, is a specific in colic and cold watry indigested humours); *croton humile* (which Browne says, in his History of Jamaica, page 347. c. 2. is of a very hot and pungent nature, and is frequently used in baths, and fomentations for nervous weakness); and lastly, the *croton eluteria* (the bark of which is well known to be the *cascarilla bark* of the shops; one of the most valuable, if not *the* most valuable, of all our light aromatics and tonics, for delicate people, with weak digestions).

The croton seeds and oil, have of late years attracted much attention amongst the practitioners of Europe. The following notices are amongst the best. By Dr. *John Gordon* in the London Medical Repository, for January, 1822. By *W. T. Iliff*, in the same work and Number, page 16. By the same in the Number for December, 1822. This last mentioned gentleman, has analysed the kernels and oil, and found that one hundred parts of the first con-

* See his Hortus Jamaicensis, vol. ii. p. 290, 291, 292.

tained twenty-seven of acrid principle, thirty-three of fixed oil, and forty of farinaceous matter. The oil itself is composed of forty-five of acrid principle, and forty-five of fixed oil. Dr. Nimmo ascertained that the alcohol solution was the best vehicle for administering the active principle of the croton oil, and gives the following formula.

alcohol. croton. ʒss.
syrupi simpl.
mucil. gum. arab. aa ʒij.
aquæ distillat. ℥ss. misce.

Dr. Carter has given us some excellent chemical experiments, on the effects of the croton oil, which may be found in number 98 of the Medical Repository, page 1.; and in the Number 102, for June 1822, there is a paper I am sure the reader will be much pleased with, entitled, "*A Sketch of the Botanical Literature of the Croton Tiglium,*" by John Frost, Esq.; by which it appears that the first correct account of this plant, is given in Jacob Robart's work called, "Plantarum Historia Oxoniensis Universalis," published in 1649.

By an interesting communication which I have lately received from India, from Mr. Robert Daly of the medical store department of Madras, I learn that the croton seed had there proved to be in a singular manner emmenagogue: when prescribed by Mr. Underwood, in upwards of fifteen cases of obstructed menses, in the female asylum, it in all of them had the desired effect, of bringing on the *catamenia.*

LXI.

DILL SEED. *Saddacooppéi* சதகுப்பை (Tam.) *Sattacooppa* (Cyng.) *Soie* سوي (Duk.) *Sowa* (Hind.) *Misrēyā* मिश्रेय *Sītăsĭvă* शीतशिव *Sālēyă* शालेय (Sans.) *Suddapa* (Tel.) *Suva* (Guz.) *Moongsi* (Jav.) *Buzralshibbet** بزراشبت (Arab.)

ANETHUM GRAVEOLENS (Lin.)

Cl. and Ord. Pentandria, Digynia. Nat. Ord. Umbellatæ. (Lin.)

This seed, which is sometimes sold in India under the name of caraway; and which Dr. Pearson considers as a superfluous addition to the materia medica list; is reckoned a very valuable medicine by the Tamool practitioners. It is given in infusion, as a stomachic, and also as a grateful cordial drink to women immediately after lying in. The leaves applied warm, and moistened with a little oil, hasten suppuration; the seeds have an aromatic, sweetish odour, by no means unpleasant, with a moderately warm and pungent taste; and have been employed with success by European practitioners, in the flatulent colic of infants, in doses of fifteen or twenty grains of the powder, also to stop hickup or vomiting.

To this plant, as it appears in India, Dr. Roxburgh has given the name of *anethum sowa*, considering it as a new species. Dr. Rottler, however, has seen no necessity for changing the name, and I have gone by his decision. *Anethum graveolens*, is a native of Spain and Portugal, but is now cultivated in Hin-

* This is more properly speaking the Arabic name for fennel-seed — anethum fæniculum.

doostan; where the seeds, called sometimes by the Brahmins of Lower India, *Mishi* (Sans.), are frequently sold in the bazars for *caraway-seeds*, but they are considerably broader and flatter, and not quite so long. The *anethum panmorium* (Rox.), has a strong resemblance to the *an. fœniculum*, and is common in Bengal; it is a warm aromatic, and is called in Hindoostanie *mayuri*, and in Sanscrit *mad' hurica*.

LXII.

DEER, SPOTTED. *Pollee maun* புள்ளி மான் (Tam.) *Sárága* (Can.) *Cheetul* چيتل (Duk.) *Doopie* (Tel.) *Zubbee* ظبي (Arab.) *Gouzun* گوزن (Pers.)

CERVUS AXIS (Var.)

This beautiful species of cervus, is very common in many parts of India, and is sometimes called by writers on mazology, the gangetic stag; it is commonly about three feet and a half high, of a pale, rufous brown colour, spotted with white; the horns are round, slender, erect, with bifid or trifid summits; as venison, it is not worth much, unless when caught young and fed properly, then the flesh is delicious. The other species of the genus, to be met with in Lower India; are, 1. the *cervus muntjac* (Lin.) or rib-faced deer, this has horns rising from a cylindrical hairy base, three-forked, and the upper fork hooked; 2. the *cerfe des sardennes* of Buffon; and 3. the *cervus cadaba* (Buch. MSS.) which the Canarese call *condagúrúvi* from its being usually found in mountainous situations.

Of the antelope species. One, *antelope orientalis* (Var.), is verycommon in many parts of the lower provinces of India, and is, I believe, not rare in Upper Hindoostan; it is when full grown, a noble and beautiful animal, with spiral or lyre-shaped horns, body rufous above, and white beneath, with longish ears, and tail terminating in a tuft of hair; in its form otherwise, it approaches to the a. scripta of Pallas; Turton has called it *a. coromandæliensis.* As venison, it is tough and insipid; in Sanscrit it is मृग *mriga.* *Maun* (Tam.) *Ginka* (Tel.) *Ahoo* اهو (Pers.) *Hurn* (Hind.), also *tariya.* Another species often seen in the Mysore country, is, the *a. gazella,* distinguished by its straight horns, which are tapering and wrinkled. A third species is the *nylghau* or white-footed antelope, it is the *a. picta* (Lin.), commonly about four feet in height or more; and partaking in its appearance, of a mixture of the ox and deer tribe; it is found in the interior tracts of Hindoostan; in Tamool it is *kadumbéi,* *Neelghau* نيلگاو (Duk.) A fourth species to be met with, is the *a. oreas* (Lin.), or elk antelope, of a grey colour, with tapering horns, spirally carinated. A fifth species is the *a. tragocamelus* (Lin.) or Indostan antelope, also grey, with a long flocky tail. and dorsal protuberance, it is very rare.

The musk deer, moschus moschiferus, is to be found in the *Sirmoor* or *Nahan* country, in Upper India. The beautiful small species *m. pygmæus* is common in Lower India. *

* It is not larger than a domestic cat; of a bay colour with slender legs, and has a head large for the rest of the body; its aspect is mild, and habits gentle; the English in India sometimes call it improperly hog deer: it has rarely been known to survive a voyage to England. Mr. Elphinston, in his excellent Account of

LXIII.

DITTANY OF CRETE. *Bucklutulgezal* بقلةالغزال (Arab.) *Dictame de Crete* (Fr.).

ORIGANUM DICTAMNUS (Lin.)

Cl. and Ord. Didynamia, Gymnospermia. Nat. Ord. Verticillatæ (Lin.) *Diptam dosten.* (Nom. Triv. Willd.)

The dittany of Crete, I have never seen in India; and have merely given it a place here, from finding that though now in a great measure exploded from our Mat. Med. it is still esteemed by the Arabians, and Persians, who class it amongst their *Mokewyat-meoadeh** مقويات معده (Tonica.), and *Mudorrat* (Stimulantia.) It is a perennial plant, with a hairy stalk, of a purple colour, seldom more than nine inches high, and having thick, round, white, woolly leaves. The ancients prized it highly, and amongst others, *Virgil* sang its praises, and *Cicero* notices it in his work, "*De Natura Deorum.*" Celsus reckoned it emmenagogue, and alexipharmic; the leaves have been given in substance from half a drachm to a drachm; and in infusion, to the quantity of half an ounce for a dose. Dr. Thornton seems to think that the real

---

Cabul, says, that the most remarkable animal of the deer kind he saw in that country, was there called *pawzun* پازن distinguished by the great size of its horns, and the strong, but not unpleasant smell of its body. See his work, page 142.; and Dr. T. Hamilton, in his Account of the District of *Puraniya*, says, that he there met with the *cerfe des sardennes* of Buffon, MSS.

* For the opinion of the Arabians on this subject, the reader is referred to an Arabic medical work, entitled شرح نغيسي

virtues of this plant are hitherto but little understood; it is a native of Crete, and has a piercing, aromatic odour, and pungent taste. The bastard dittany, as it has been called by Gerarde, and which is the *fraxinelle* of the French, and the *white dittany* of Parkinson, has been sometimes confounded with our article, but is altogether different; it is the *dictamnus albus* (Lin.), Cl. and Ord. Decandria Monogynia. Nat. Ord. Multisiliquæ. The whole plant when gently rubbed emits an odour not unlike lemon-peel; but when bruised has something of a balsamic scent. It is a native of Spain, and has been called by the Arabians مشكرامي مشبع being considered *antiepileptic* and *vermifuge*, in doses of one scruple, twice daily. The common marjoram does not grow in India, but the species majorana or sweet marjoram is growing in the botanical garden of Calcutta; the leaves and tops of it have a moderately warm bitter taste; the plant itself is supposed to possess virtues in nervous affections. Mr. Phillips says, that Hartman declares, that it restores the sense of smelling when lost; and cites Woodville for its successful application in cases of schirrous tumour. On the subject of the dittany of Crete, Celsus gives this singular opinion: "Infantum vero mortuum, aut secundas expellit "aquæ potio, cui salis ammoniaci, p. xi. aut cui "dictamni cretici adjectum est." Cels. lib. v. cap. xxv.

LXIV.

DRAGON'S BLOOD. *Kāndámoorgarittum* காண்டமூர்கரிட்டம் (Tam.) *Catgamoorgum*

nítoóroo (Tel.) *Cātukamrigarakta* धातुकमृगरक्त (Sans.) *Damulākhwain* دم الاخوين (Arab. and Duk.) also *idarūmie* ايدعرومي (Arab.) *Khūnisyāwashān* خون سياوشان (Pers.) *Heraduky* (Hind.) *Sang-dragon* (Fr.) *Jaranang* (Palembang.)

CALAMUS DRACO (Willd.)

Cl. and Ord. Hexandria Monogynia. Nat. Ord. Tripetaloideæ (Lin.) *Drachenblutgebender rotang* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. ii. p. 203.

This dark-red coloured, inodorous, and insipid resin, would appear to be often confounded with *kino* by the native doctors of Lower India; as both, on being presented to a hakeem, get the name of *dumulackwayn*, and both, on being shewn to a vytian, are called *kandamoorgarittum*; they mutually consider it as astringent, which, however, Dr. Duncan, junior, tells us, the true dragon's blood is not. I am inclined to think, however, that genuine kino is but partially known in the peninsula of India.

It would appear that different trees yield dragon's blood. Mr. Thomson, in his London dispensatory, informs us, that it is got from the *pterocarpus draco* (Lin.), which is a native of South America *, it also exudes from the *lingoa* (Rumph.), which is the *pterocarpus indicus* (Willd.), and there is no doubt but that it is obtained from the *calamus draco*† of the eastern islands, by wounding the bark of the tree. The dragon's blood which is met with in Indian bazars is brought from *Kang Kow*, and also from

* It appears by Dr. Horsfield's account of Java medicinal plants, that the pterocarpus draco also grows in Java, and is there called *kayu-sonno* or *ansan*; the bark is an astringent.

† It is the palmijuncus draco (Rumph.) amb. 5. p. 114. t. 58.

Passier, on the coast of Borneo, where Mr. Elmore* says it is procured of a finer quality than in any other part of the world; also from *Macassar*† on Celebes; but chiefly manufactured, Mr. Crawford tells us, at *Jambi*, *Palembang*, and *Banjarmassin*; at the second mentioned of these places it is called *Iaranang*.

Langsdorff, in his Voyages and Travels, p. 16., observes, that the tree which produces the dragon's blood is a native of the Canary Islands; and Niebhur mentions it as growing in *Hydramaut*, a province of Arabia Felix. (Travels, vol. ii. p. 107.)

Dragon's blood having been ascertained not to be astringent, has been discarded as a medicine by European practitioners. Alibert in his "Nouveaux "Elémens de Therapeutique," (vol. i. p. 173.) says, "Toutefois il faut l'avouer sa reputation est un peu "d'echue." The Tamool doctors recommend a solution of it in arrack as an external application to the head and temples in cases of syncope. It is occasionally used in the arts in Europe for staining marble red, and may be distinguished from kino by being inflammable and fusible, and emitting an acid vapour like that of benzoin.

The dalbergia monetaria (Lin.), a shrub and native of Surinam, yields a resin very similar to dragon's blood.

The Arabians give dragon's blood a place amongst their *Kabizat* قابضات (Astringentia), and Avicenna, (p. 160.), tells us that its Arabic name signifies the blood of two brothers.

* See his Directory and Guide to the Indian Trade, p. 29.
† See Beckman's Voyage to Borneo.

LXV.

DUCK. *Waat* வாத்து (Tam.) *Batoo* (Tel.) *Badak* بدق (Duk.) *Murgāb* مرغاب (Pers.) *Awaz* اوز (Arab.) *Vărătă* वरट (Sans.) *Canard* (Fr.)

ANAS DOMESTICA.

The tame duck in India differs in nothing from the same animal in Europe; as food, it is considered as nourishing and stimulating, too much so, perhaps, for such as are in delicate health. Of the wild duck there are many species* in eastern countries, several of which, I am inclined to think, nay know, have not hitherto been scientifically described; the most prized in the Carnatic for the table, is a small variety of the *anas boschas*, distinguished by much blue in the wings, and by being rarely in the slightest degree fishy to the taste; its names are the following: — *Neerwaat* (Tam.) *Neela bātoo* (Tel.) *Jangalibadak* جنكلي بدق (Duk.), and *Surkhāb* سرخاب (Pers.) What is called the *brahminy duck* by the English on the Coromandel coast, is nearly as large as the Muscovy duck (anas moschata), but is a much more beautiful bird, being in colour a brownish yellow, spotted with black, though this I have found to vary; it is seldom brought to table, being somewhat strong in flavour. The Mahometans term it چغوي it is in Tamool, *pápárátárá vāt*, and in Tellingoo *bápáná-bātoo*. The vytians suppose that the flesh of ducks

* Dr. F. Hamilton found in the *Puraniya* district, the following species: *songhas* (anas clypeatus), *dighongs* (anas acuta), and *salmuriya* (anas ferina.) MSS.

has a tendency to produce flatulence and indigestion. I perceive that Aghastier in his Medical Sastrum, *Aghastier Vytia Anyouroo*, cautions the delicate against the use of it.

LXVI.

EGG, FOWL'S. *Koray mootay* கோழி முட்டை (Tam.) *Gooddoo* (Tel.) *Beejoo* (Cyng.) *Andā* ايندم (Duk.) *Bayzah* بيضه (Arab.) *Tóókim* تخم (Pers.) *Ándă* अण्ड (Sans.) *Œuf* (Fr.)

OVUM.

The eggs of the common fowl, are, perhaps, a little smaller in India than they are in Europe, but excellent. There is, however, a large variety of the *gallus domesticus*, reared chiefly by the Moormen, which lays eggs as big as those of northern countries. The vytians consider fowls' eggs as aphrodisiac, and powerfully tonic. *See Aghastier Vytia Anyouroo.*

The Brahmins do not eat eggs, as they contain the germ of life; but many of the inferior casts of Hindoos do. Besides those of the common fowl, the eggs of the jungle fowl are much prized (gallus indicus)*; as are also those of the pea-hen (pavo cristatus), which are frequently brought from the woods in the northern circars. (See article, Fowl, Common, in this chapter.) An egg consists of the shell, which is composed of carbonate of lime 72, phosphate of lime 2, gelatine 3, water 23; a thin, white, strong, membranous animal substance; the albumen, which, from its coagulability, is used for

* Gallus sonneratii, (Tem.)

clarifying liquids, and when beaten with alum, forms the alum used for inflamed eyes; and lastly the yolk, which consists of an oil of the nature of fat oil, and which is used for rendering resins and oils diffusible in water.

LXVII.

ELDER, COMMON. *Uktee* اقتي (Arab.), also *Khamān* خمان (Arab.) *Sureau ordinaire* (Fr.) *Fliederblumen* (Ger.) *Sambuco* (It.) *Sabuco* (Sp.) SAMBUCUS NIGRA (Lin.)

Cl. and Ord. Pentandria Trigynia. Nat. Ord. Dumosæ. *Gemeiner hollunder.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. i. p. 1494.

The elder tree is little known in India, though I perceive that it was growing in the botanical garden of Calcutta in 1815. The Arabians and Syrians appear to be well acquainted with it, and consider the inner green bark of its trunk as aperient and deobstruent; the same part of the tree in the days of Sydenham, was given by the practitioners of Europe, in wine, in doses of from ten grains to half a drachm, in cases requiring hydragogue purges.* The *sambucus nigra* is a native of many parts of Europe and also of Japan. Dr. Horsfield, in his account of Java Medicinal Plants, informs us, that a species of sam-

* The berries were in former times given in fevers, also in gout and rheumatism. The flowers, which have a peculiarly faint and sickly odour, are chiefly used in fomentations and cooling ointments. Alibert recommends them in infusion at the commencement of inflammation of the throat. Elemens de Therapeutic, vol. ii. p. 213.

bucus grows in that island, and is there called *patriwulān;* the natives use it as a diuretic. I perceive by *Michele's Della Corcirese Flora,* p. 39, that another species of sambucus, (s. ebulus,) common at Corfu, is supposed to possess virtues similar to those of the s. nigra, and to be more especially indicated in dropsical cases.

The elder tree is very bushy, with numerous branches, seldom rising higher than sixteen feet, with opposite leaves, unequally pinnate, and cream-coloured, sweet scented flowers.

LXVIII.

ELECAMPANE. *Ussululrasun* اصل الراسن (Arab.) *Bekhizanjabīlishāmi* بيخ زنجبيل شامي (Pers.) *Inule aulnĕe* (Fr.) *Alantwurzel* (Ger.)

INULA HELENIUM (Lin.)

Cl. and Ord. Syngenesia Superflua. Nat. Ord. Compositæ discoideæ. See Spec. Plant. Willd. vol. ii. p. 2089.

The Arabic and Persian names here given, are those of the root, the only part of the plant that is used in medicine; it does not appear, however, to be at all known to the Hindoo doctors. The Arabians place it amongst their *Adviyaheezeh* ادويه هيضه (Stomachica.) It also seems by Thunberg's account (Travels, vol. iii. p. 202.), to be considered as stomachic by the Japanese.

Elecampane root has an aromatic and slightly fetid odour; when chewed, the taste is at first disagreeable, glutinous, and somewhat resembling rancid

soap, and then aromatic, bitter, and hot. Formerly it used to be prescribed in dyspepsia, pulmonary complaints, and palsy, in doses of from a scruple to a drachm; of late years it is nearly discarded from the British works on the materia medica. The ancients* considered it as alexipharmic, and ordered it in putrid fevers. Dr. Pearson is of opinion, that it is the least efficacious of all the bitters. The French of these days, prepare with it a wine† (vin d'aulnée), which they occasionally give as a stomachic.

The inula helenium, is a perennial plant, with a leafy, round stem, and seldom rises higher than three feet, having large, ovate, serrated leaves, solitary, golden coloured flowers, and a thick branched root of a greyish colour.

LXIX.

EUPHORBIUM. *Shadraykūllie paal* சதுரக் கள்ளிப்பால் (Tam.) *Bontajemmodoopaloo* (Tel.) *Saynd ka dood* سینڈ کا دود (Duk.) *Akal nafsah* اکل نفسہ (Arab.), also *farfiyūn* فرفیون (Arab.) *Dalookgahehkerry* (Cyng.), also according to Forskhal, *gholak* and *kala* غلک (Arab.) *Nara-shij* (Hind. and Beng.) *Euphorbe* (Fr.) *Euphorbium* (Ger.) *Vājrākshīra* वज्रक्षीर *vājrākāntākā* वज्रकण्टक (Sans.)

EUPHORBIA ANTIQUORUM (Lin.)

* This plant, according to Pliny (Nat. Hist. lib. xxi. cap. xxi.), first sprang from the tears of Helena. It is supposed, by his account, to preserve beauty and make the skin fair, and also to procure mirth and make the heart merry!!

† See "Manuel des Plantes Usuelles," vol. i. p. 294.

Cl. and Ord. Dodecandria Trigynia. Nat. Ord. Tricoccæ (Lin.) *Wahre wolfsmilch.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. ii. p. 881.

The milky juice got by wounding the branches of the *shadraykullie* (Tam.) is extremely corrosive, but when boiled with a small quantity of gingilie oil *, the native practitioners use it as an external application in rheumatic affections: they also employ it to deaden the pain of the tooth-ache: internally, a little diluted, it is administered by them as a purge in those cases of obstinate constipation, which are often troublesome when there is an enlargement and induration of the spleen or liver.

It would appear that the milky juice of several species of euphorbia, when hardened, becomes the euphorbium of our shops. Miller seems to think that it is from the euphorbia canariensis (Lin.) that the drug now imported into England is chiefly taken. Linnæus thought that the dried juice of the euphorbia officinarum should alone be used; and this it would appear is the plant described by Mr. Jackson as producing the euphorbium in Morocco; and which Bruce in his travels mentions under the name of *Koll-Quall.* Mr. Jackson † says that the Arabs and Shellas call the plant *dergmuse,* and that in the lower regions of mount Atlas, the inhabitants collect the concreted gum-resin, which they call *fiūrbuine,* in September.

The euphorbia antiquorum ‡ or triangular spurge, grows in many parts of India, rising sometimes to

* Prepared from the seeds of the sesamum orientale.

† See his account of the empire of Morocco, p. 81.

‡ Pliny tells us that this plant was first discovered by Juba, king of Mauritania, who gave it the name of his own physician, *Euphorbus,* brother to the learned Musa, physician to Augustus

the height of twelve feet, and sending out numerous irregular, spreading, twisting branches, in general three-cornered, but having some two, and others four angles; at their extremities are several very minute roundish leaves, or rather tubercles, which soon fall off, and near these, come out now and then, a few crimson-coloured flowers, which have five gibbous, thick, truncated, whitish petals. The plant is the *Schadidacalli* of Rheede (Hort. Mal. ii. p. 81.), and the *Súdúsúdú* of the Malays: one Sanscrit name of it in Lower India is *Tidhāra*, and the Arabic one *Zékoom* زقوم it is common on Ceylon (Flor. Zeyl. 199.); in Bengalie and Hindoostanie it is called *Narashij*.

Euphorbium used formerly to be administered by European practitioners in dropsical cases, and Shroder informs us (p. 780.), that he gave it in doses of from 5 to 10 grains; but owing to its violent effects, it is now exploded or nearly so: diluted with any inert powder, it is supposed to be an excellent errhine in lethargy, amaurosis, palsy, &c. Orfila places euphorbium amongst his poisons.* The Arabians rank this substance amongst their *Moosilat balgham* مسهلات بلغم (Phlegmagoga) and *Mokerehat* مقرات (*Vesicatoria*). See a Persian medical work intitled تذجر جامسپ حکیم, Tejur Jamasp Hawkim. The French writer Loiseleur Des Lonchamps† gives no less than six species of euphorbia which might be used as substitutes for ipecacuanha; the best would appear

---

Cæsar; the juice of the plant in those days was considered as a valuable external application to the crown of the head in cases of bites of serpents. Nat. Hist. lib. xxv. cap. vii.

* See "Traite des Poisons" (vol. ii. part. i. p. 35.)

† See "Manuel des Plantes Usuelles, &c. vol. ii. p. 10. Premier Mémoir."

to be the euph. gerardiana, the powdered root of which vomits easily in doses of eighteen or twenty grains. Virey*, in his "*Histoire Naturelle des Medicamens,*" says that the euphorbia heptagona of Ethiopa is a mortal poison, and that the natives of that country poison their arrows with the juice of it. For an account of the chemical analysis of the famous American emetic euph. ipecacuanha, the reader is referred to Barton's "*Vegetable Mat. Med. of the United States,*" vol. i. p. 263. appendix.

Orfila supposes the poison of euphorbium to have a local action, capable of exciting inflammation, and equally operating on dogs and men. See his work vol. ii. p. 35.

LXX.

FEBRIFUGE, SWIETENIAN, or BARK OF THE RED WOOD TREE. *Shemmárum* சேமமாம (Tam.) also *Woomæ márum* (Tam.) *Soimido* (Tel.) روهونا (Hind. *Swamy* (Can.) *Pătrăngă* पत्रांग (Sans.) *Rohun* (Beng.)

SWIETENIA FEBRIFUGA (Roxb.)

Cl. and Ord. Decandria Monogynia. Nat. Ord. Trihilatæ (Lin.) *Fieberrinden Mahagonibaum.* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. ii. p. 557.

The swietenia febrifuga, like all the other species of its genus, is a lofty tree, common in the *Rajamundry circars;* in the *Cuddapa* district, particularly near *Chittwail;* and in *Chunar;* it is also a native of

* See his work, p. 299.

Siam. The tree was first brought to the notice of European professional men by Dr. Roxburgh, who discovered that its bark was a good tonic in intermittent fever: given to the extent of four or five drachms in the twenty-four hours I have found it to be a useful medecine, but beyond that quantity, it, in every instance in which I tried it, appeared to me to derange the nervous system, occasioning vertigo and subsequent stupor.

The bark is of a dingy red colour, and has a rather pleasant, bitter taste, with a slight degree of austerity; it breaks easily, and is covered externally with a roughish, grey, inert epidermis; its virtues are extracted by water, both in infusion and decoction; but its tincture is, perhaps, the most valuable of all its preparations, when the bark is good as a stomachic.

Our article with three other species are growing in the botanical garden of Calcutta; the tree is commonly known on the Coromandel coast under the name of *red wood tree*, which its Tamool name implies; it is, as already observed, large, with a straight trunk and numerous branches, leaves alternate and abruptly pinnated, leaflets opposite, very short and petiolated, with a panicle very large, terminating, diffuse; it bears a great number of white, inodorous flowers: of the genus, Willdenow says, "*Cal.* 5. fidus. *Petala* 5. *Nectar.* cylindricum ore antheras gerens. *Caps.* 5. locularis, lignosa, basi dehiscens. *Sem.* imbricata, alata." For further particulars regarding this new medicine, the reader is referred to Dr. Duncan's admirable inaugural dissertation, published in Edinburgh in 1794, and also to an Essay on it by Mr. Breton in the Medico-Chirurg. Trans. vol. xi. p. 324.

Various barks have at different times been recommended as substitutes for the cinchona of the shops; in India the bark of the melia azadirachta has been ascertained to possess powerful tonic and antifebrile virtues (see article *Vaypum puttay* in Part II. of this work), as has also that of the cinchona excelsa (Roxb.) see article *Pundharoo* (Tel.) in the same part. The bark of the *tuna* tree (Cedrela Tuna*, Roxb.) is well known to have similar qualities, and is in great repute amongst the Hindoo doctors of the circars: it is extremely astringent, but not particularly bitter; for the use of the flowers, and the wood of this tree in the arts, the reader is referred to another part (iii.) of this work. Mr. Gray in his supplement to the Pharmacopœias (p. 69) informs us that the bark of the achras sapota is very astringent, and we know that it was at one time supposed to be the Jesuits Bark itself, though Mr. Miller says, its effects when given to the negroes were not such as to encourage repetition. The bark of the *magnolia glauca*, has sometimes been had recourse to for a similar purpose. Humboldt, in his political Essays on the Kingdom of New Spain (vol. ii. p. 402), tells us that "at Mexico, it is believed that the Portlandia Mexicana, which was discovered by M. Sesse, might "serve as a substitute for the quinquina of Loxa; "as is done in a certain degree by the Port. hexandria, at Cayenne, by the bonplandia trifoliata

* This a very large tree with an erect stem, which is smooth and grey, the leaves are alternate, abruptly pinnate, drooping and about twelve or thirteen inches long; leaflets from six to twelve pair, opposite or nearly so; short, petioled: flowers numerous, small, white, and smell like fresh honey. (See Roxburgh's Cor. Pl. vol. iii. p. 33.) The tree is *Toonmarum* (Tam.) *Toon* طون (Hind.) *Suren* (Malay) *Tunna*, *Tuni* (Sans.) It is common in the Islands of the Indian Archipelago.

"(Willd.) on the banks of the Oronoko, and the "Swietenia febrifuga of Roxburgh in India."

The genus cinchona, of which twenty-four species have been described, Mr. Thomson, with much truth, observes is still involved in considerable ambiguity. Alibert, in his "Nouveaux Elemens de Therapeutique," notices no less than twenty-five species, those, however, which have hitherto more especially attracted the notice of medical men, are the three which supply the pale, yellow, and red bark, in other words the cin. lancifolia, cin. cordifolia, and cin. oblongifolia. The component parts of the first, according to Pelletier's account, are I. Cinchonine a salifiable base combined with kinic acid. II. Green fatty matter. III. Red and yellow colouring matter. IV. Tannin. V. Kinate of lime. VI. Gum. VII. Starch, and VIII. Lignin. In the cin. cordifolia or yellow bark, *Caventou* discovered also a salifiable base, which he termed *Quinine*. In the red bark (an oblongifolia) the two salifiable bases are found to be united, viz. the *cinchonine* and *quinine*. The cin. lancifolia is supposed to be that which affords the real and original cinchona of Peru or pale bark; it is now very rare, but it is powerfully febrifuge. The red bark, although it possesses great astringency and antiseptic qualities, is not supposed to be so directly febrifuge. The yellow bark (cin. cordifolia,) is not so austere as the last mentioned, but is more bitter, and was considered by Mutis and Zea as only indirectly febrifuge; when good, however, all its varieties are excellent remedies.

Before concluding I shall simply mention that for arresting intermittent fever, Dr. Finlayson found the

three following roots in use amongst the *Siamese*,* but of what plants it is not said, *mai-dayng*, *Si fankhonthei* and *Paak-faak*, which last is supposed to be the root of the sappan wood. Of late years the rhatany root has been much extolled for its virtues in intermittent fever, particularly by Doctors Reece, Marris, Nisbet, &c. some of whom are of opinion that it approaches nearer to the Peruvian bark than any other medicine; of the extract five or ten grains are given twice daily; of the powder the dose is from ten grains to thirty. The Peruvians esteem this root as tonic and stomachic, and call the tree *Ratanhia*, (See Flora Peruviana, vol. iv. p. 61.) it is the krameria triandria, (Ruiz.). Whatever may be the medicinal properties of the root it would appear that Mr. Peschier has lately discovered that it contains a distinct substance to which he has given the name of *krameric* acid. (Journal de Pharmacie, vi.) The Rhataniæ radix we learn from that valuable journal, the London Medical Repository (No. 120, p. 498.) is not only employed medicinally by the inhabitants of Lima, but the Portuguese there use it for improving the colour, astringency and richness of their wines. Dr. J. Curry of Guy's Hospital found the tincture of this root of great efficacy in diarrhœa. According to Vogel, it consists of tannin 40. gum. 1.5. fecula 0.5. ligneous fibre 48. water and loss 10.

* I mention this in the hope, and with a most sincere wish, that interesting and minute research may soon be made respecting the medicinal plants of Siam and the adjacent countries, which hold out a fair and ample field for valuable discoveries.

LXXI.

FENNEL-FLOWER SEED. *Cārin Sírágum* கருஞ்சீரகம் (Tam.) *Nūlla gilakāra* (Tel.) *Kaloodooroo* (Cynġ.) *Krishna-jiraka* कृष्णजीरक (Sans.) *Kolunjen* كلنجن (Duk.) *Kālā Jira* (Hind.) *Shoonez* شونيز (Arab.) *Seeah-dānah* سیاه دانه (Pers.) *Gemein Nigelle* (Ger.)

NIGELLA SATIVA (Lin.)

Cl. and Ord. Polyandria Pentagynia. Nat. Ord. Multisiliquæ (Lin.) See Spec. Plant. Willd. vol. ii. p. 1248.

These small, dark-coloured, aromatic, pleasant-tasted seeds, somewhat resemble large grains of gunpowder, and are used by the natives as a carminative in cases of indigestion, and in certain bowel complaints; they are also prescribed as an external application, mixed with gingilie oil, in eruptions of the skin: the natives use much of this seed as a seasoner for their curries, and have a notion that when it is put amongst linen, it keeps away insects: another Hindooie and Sanscrit name for the plant or seed, is *mugréla*. The nigella sativa is, by Forskahl's* account, a native of Egypt, and is there called حبه سوده *Hább Saude*. There is a species of nigella (N. Indica), a native of Hindoostan, the seeds of which nearly resemble those of the N. sativa in appearance and natural qualities, and the same names are given to both; this with another species are growing in the botanical garden of Calcutta.

* See his Medicina Kahirina.

LXXII.

FENNEL, SWEET, SEED OF. *Pērun Siragum* பெருஞ்சீரகம் (Tam.) *Dewadooroo* (Cyng.) *Pedda-gillakāra* (Tel.) *Mădhŭrikā* मधुरिका (Sans.) *Sonf* سنف (Duk.) *Mayuri* (Hind.) *Bādeeyan* بادیان (Pers.) *Razeeanuj* رازیانج (Arab.) *Adas* (Jav.) *Fenouil* (Fr.)

ANETHUM FŒNICULUM (Lin.)

Cl. and Ord. Pentandria Digynia. Nat. Ord. Umbellatæ (Lin.) *Fenchel Dill* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. i. p. 1469.

The fragrant, warm, aromatic seeds of the sweet fennel, the *Μαραθρον*, of the Greeks, are much used by the native practitioners as a carminative and stomachic; they are, however, very apt to be confounded with the anise seed, (which is not common in the southern parts of India,) and get indiscriminately the same name; in like manner they are often called by the French, *Anis douce.* The plant is cultivated in Bengal, and has had the scientific name of Anethum Panmorium bestowed upon it, by Dr. Roxburgh, who believed it to be a new species; Dr. Rottler, however, considers it as only a variety of the Anethum Fœn.

Dr. Thornton tells us that these seeds* are supposed to be efficacious in promoting the secretion of milk; a late writer on the mat. med. (Mr. Gray †), informs

* They were in great repute at one time amongst the French physicians, who considered them as aperient, sudorific, and diuretic. See Deslongchamps Manuel des Plantes Usuelles, vol. i. p. 271.

† See his Supplement to the Pharmacopeias, p. 92, 93.

us, that the root is aperient and the leaves diuretic; nay, indeed, we know that the root is one of the five opening roots as they were once called. Mr. Philips, in his work on cultivated vegetables, informs us, that the leaves in decoction have been said to strengthen weak eyes; Boerhaave thought that the virtues of the root corresponded with those of ginseng; the Romans took an infusion of the seed in wine, as a remedy for scorpions' stings. Celsus seems chiefly to dwell on their virtues as a carminative and diuretic. "Feniculum vero, et anethum, inflationes etiam levant: urinam autem movent, apium, ruta, anethum." Vide Cels. lib. ii. cap. xxv. xxxi.

LXXIII.

FENUGREEK. *Vendium* வெந்தயம் (Tam.) *Méntúloo* (Tel.) *Oolowa* (Cyng.) *Méntia* (Can.) *Helbeh* حلبة (Arab.) *Shemlit* شملیت (Pers.) *Methé* میتھی also *Moothee* (Duk. Hind. and Sans.) *Alforvas* (Port.) *Menta Soppu* (Can.) *Metheeshak* (Beng.) *Fénugrek* (Fr.)

TRIGONELLA FŒNUM GRÆCUM (Lin.)

Cl. and Ord. Diadelphia Decandria. Nat. Ord. Papilionaceæ (Lin.) *Gemeiner Kuhhorńk* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. iii. p. 1398.

The seeds of the fenugreek have rather an unpleasant odour, with an unctuous farinaceous taste, accompanied with a degree of bitterness; they are much used by the native practitioners of India in dysenteric complaints; and are commonly given in infusion, having been previously toasted. The plant

is indigenous in India, and by Forskahl's account, is much cultivated in the neighbourhood of Cairo. The modern Arabs consider the seeds as suppurative and emollient, preparing with them poultices and fomentations. The *Helbeh* seeds are frequently brought to the Malabar coast as an article of trade from the sea ports of the Red Sea; and grow abundantly in Barbary, Spain, and France. Of the genus Trigonella, Willdenow says shortly, "*vexillum* et alæ subæquales, patentes, forma corollæ tripetalæ." The species in question is an annual, rising with a hollow herbaceous, branching stalk, with oblong, oval indented leaflets, and white flowers, coming out singly at each joint from the axils, it is growing with another species, the *Piring* (Beng.) trig. corniculata, in the botanical garden of Calcutta. Sonnini, in his Travels in Egypt (chap. iii.), informs us, that the inhabitants of Rosetta prepare a kind of coffee, by toasting the seed of the fenugreek, to which they add a little juice of lemon.

LXXIV.

FIG. *Simie attie pullum* சீமையத்திப்பழம் (Tam.) *Maydipoondoo* (Tel.) *Unjeer* انجیر (Pers. and Duk.) *Teen* تین (Arab.) *Rata Attika* (Cyng.) *Ŭdŭmvără* उदुम्बर (Sans.) *Vygen* (Dut.) *Figos* (Port.) *Figue* (Fr.)

FICUS CARICA (Lin.)

Cl. and Ord. Polygamia Dioecia. Nat. Ord. Scabridæ. *Gemeine Feige* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. iv. p. 1931.

The figs which grow in India, though they are sufficiently sweet and palatable, are very inferior in richness of flavour to those of Turkey, or the southern parts of Europe; nor are the natives in the habit of drying or preserving them. The vytians prescribe figs in consumptive cases; the Arabians place them amongst their *Mobehyat* مبهيات (Aphrodisiaca) and *Munzijat* منضجات (Suppurantia.) The tree is called *Doomoor* in Bengalie, and is too well known to be botanically described here; it, with thirty-four other species, are growing in the botanical garden of Calcutta.

For the opinions of the Persians regarding this fruit, the reader may consult a medical work, written by Ismael Ben Hussein, Ben Mohamed Jorany, entitled ذخيره خوارزم شاهي *Zekhireh Khuārizm Shahy*, the preface gives a description of the kingdom of Khuarizm, its climate, products, water, and soil.

LXXV.

FLORIKEN or FLOYERKEN. *Wárroogoo khòree* வரூகுகோரி (Tam.) *Chénookodi* (Tel.) Otis Campestris (Leach.)

Floriken is a name commonly given by the English inhabitants of the lower provinces of India, to a small sort of bustard, which, except in being a little less in size, appears to me not materially to differ from the otis tetrax of Linnæus, or what Leach calls otis campestris; it is a beautiful, speckled, greyish-coloured bird, with a straight, conical, compressed bill, legs with three toes, connected by a membrane at the base, and wings of moderate dimensions,

being commonly about sixteen or eighteen inches in length. It has got its Tamool name from being frequently found in the Warroogoo fields (paspulum frumentaceum), and has obtained a place here from being considered as a great delicacy; when dressed for the table, at certain seasons (September) it is particularly prized by the Mahometans. The common bustard, or rather a variety of it, otis Bengalensis, is not unfrequently met with in the Mysore provinces, but it is extremely difficult to get near enough to kill it.

LXXVI.

FLOUR OF WHEAT. *Godumbay māo* கோதுமைமாவு (Tam.) *Tringoo pittay* (Cyng.) *Geunkā ata* گیہوںکا اٹا (Duk.) *Godoma-pindie* (Tel.) *Gōdhūmă-pishtă* गोधूम पिष्ट (Sans.)

TRITICI ÆSTIVI FARINA.

Of the various uses of this most valuable substance I need say nothing here.

Several kinds of wheat are now cultivated with great success in many parts of India; two varieties of the triticum æstivum are now commonly reared in the interior and northern provinces of Hindoostan, during the cool season: this species is called in Sanscrit गोधूम *Godhūma*, in Ben. *Gom*, in Hind. *Gioon*, in Pers. *Gundum* گندم in Arab. *Bir* بر. Of the trit. hybernum (Lin.) two varieties, by Dr. Roxburgh's account, are also cultivated: Dr. Buchanan (now Hamilton) informs us, that in some parts of Mysore

he found that the triticum monococcum was common, and there called *Júvígōdi.* The triticum spelta is also to be met with in some of the northern tracts of Hindoostan, and would seem, by Forskahl's account, to be that species chiefly cultivated in Arabia, and there called قمح also حنظ. The natives of India eat wheat, but they have many other grains which they like better; in the same way that the natives of Egypt, Mesopotamia, and Assyria, according to Niebhur*, give their *Dourra* the preference to all other grains, and will even sell their wheat to purchase it; it is the holcus saccharatus (Lin.) to be further noticed in another part of this work. In the Carnatic the climate is too hot to grow wheat with agricultural advantage, neither does it appear that the climate of Mysore is very favourable for its culture; the wheat of Upper India is excellent. †

LXXVII.

FOWL, COMMON. *Koli* கோழி (Tam.) *Kódi* (Tel.) *Moorghe* مرغي (Duk.) *Murgh* مرغ (Pers.) *Kŭkkŭta* कुक्कुट (Sans.) *Volaille* (Fr.)

GALLUS DOMESTICUS (Steph.)

* See Niebhur's Travels in Arabia, vol. ii. p. 293.

† According to Pliny, the wheat of Italy was in his day the best in the world. (Nat. Hist. book 18. chap. vii.) It appears by the book of Ruth, that wheat was cultivated in Syria 3000 years ago. Sicily is supposed to have been the first country in Europe in which grain was cultivated, if we may judge from the worship of Ceres in that island. Pliny speaks highly of the great fruitfulness of the African wheat. When it was first introduced into England it may be difficult to say, Cæsar found corn growing there; it was not cultivated in America, till about the beginning of the seventeenth century.

Fowls, as they are purchased from the natives, are by no means desirable food, being commonly badly fed; but when shut up for some time and properly taken care of, they are excellent; affording a light and nutritive aliment. There are several varieties as already noticed under article *egg;* some of which are particularly prized by the Moormen for their courage, others for the large size of the eggs the hen lays, &c. The *wild-fowl* or Jungle-fowl is a very delicate bird to eat, when not too old; it differs but little in form from the domestic animal, but is smaller, and is more uniform in its colour, its comb is toothed, mouth wattled beneath, the feathers on the neck are elongated, spotted with white and fulvous, with membranous tips; the throat, breast, and abdomen, and also the back are grey striped with white; the wing-coverts are of a reddish chesnut; the hen is much less than the cock, and has neither comb nor wattles. The Jungle-fowl (gallus Indicus) of Leach, is common in most of the Indian woods, it is *Adíwíe kodi* (Tel.) *Cāt koli* (Tam.) and *Junglie ka moorghie* (Duk.) *Maké beyabanie* ماكي بيابانى (Pers.) and *Caudu-cauli.* (Can.) The house, or domestic hen, is *Dujaj* (Arab.) *Huckree* (Hind.) and *Makeyān* ماكيان (Pers.) The g. giganteus (Tem.) is, I believe, not to be found in India, but is common in the forests of Sumatra, where Mr. Marsden tells us that such is its height, that it can with its bill reach food that is placed on a common dining table; in its domestic state I have seen it at Mantua and Pádua.

LXXVIII.

FRANKINCENSE. *Koondricum* குந்திருக்கம் (Tam.) *Coondoor* کندر (Duk.) *Coonder* کندر (Pers.) *Koondoorooskum* (Tel.) *Bistij* بسذ (Arab.) *Hoonda googool* (Cyng.) *Encens* (Fr.) *Kŭndŭ* कुन्दु (Sans.)

BOSWELLIA GLABRA (Roxb.)

Cl. and Ord. Decandria Monogynia. Nat. Ord. Miscellaneæ. (Lin.)

The substance called *koondricum* by the Tamools, is very common in the Indian bazars, and is used as an incense in religious ceremonies, especially by the Hindoos and Portuguese; being, though not quite of so grateful an odour, much cheaper than benzoin; it is supposed by the Mahometan doctors to be a species of olibanum, and they give nearly the same name to both, but it is very unlike olibanum in its appearance, being always seen in pretty large agglutinated masses, composed of light brown, and yellowish tears; and having a strange stony kind of hardness when pressed between the teeth, whereas olibanum, at least the Arabian, is in separate, small roundish balls, or large grains, which do not give the same sensation on being chewed; on the contrary, they, when warm, are adhesive and stick to the teeth.* Koondricum is besides much less pungent and bitter, and is more perfectly soluble in spirit of wine and ether, nor does it burn with the same brilliant light that olibanum does.

Koondricum is brought to India from Madagas-

* See Benyowsky's Travels, vol. ii. p. 321.

car, from Borneo, from Socotora, from Arabia*, and also from Pedir on the coast of Sumatra; the tree which yields it, is common in many of the eastern islands, and was there found by Rumphius, who called it *canarium odoriferum* (Amb. ii. t. 50.); it is also a native of the Circar mountains, and may be found particularly well described by Dr. Roxburgh in his Coromandel plants (vol. iii. p. 4.): it is a very tall erect tree, covered with a greenish ash-coloured bark, and called in Tellingoo *Gugulapoo-tschittoo;* the leaves, about the extremities of the branchlets, are alternate, unequally pinnate, from six to twelve inches long, leaflets sessile from six to ten pair, opposite, broad lanceolate, obtuse and one inch and a half long. Flowers numerous, short pedicelled, small, white, the wood is heavy, hard and durable; from wounds in the bark a large quantity of resin exudes, which soon becomes hard and brittle, and is often used as a substitute for pitch, and named sometimes by the Tellingoos, on the Coromandel coast, *Googil.* Dr. Roxburgh informs us, that to soften it and render it fit for use, a portion of some low-priced oil is boiled up with it. Besides its two uses already noticed, *viz.* as an incense and pitch, the vytians prescribe it mixed with ghee (clarified butter) in cases of gonorrhœa, they also employ it in what they term *Ritta Kaddapoo,* which signifies flux accompanied with blood. A second species of boswellia grows in the *Balla-gaut* mountains, which Dr. Roxburgh conceives to be the canarium odoriferum hirsutum of Rumphius. (Amb. ii. t. 51.) I have called this article frankincense, not knowing well by what other name to distinguish it, and considering

* See Tavernier's Travels, part ii. book ii.

the purposes to which it is peculiarly applied; but it differs widely in many respects from the *common frankincense* of the shops, which is well known to be an exudation from the bark of the Norway spruce fir (pinus abies); it is what the ancients called *Thus*: the common turpentine on the other hand is an exudation from the *Scotch fir* (pinus sylvestris), and the Venice turpentine is from the *larch* (pinus larix). From the common turpentine is procured by distillation with water, the *oil of turpentine*, and the common or yellow resin is nothing else than the residue of that distillation; but we shall say more about these under the head of Turpentine. See article Olibanum.

LXXIX.

FUMITORY. *Shahtra* شاهترہ (Pers. and Duk.) *Pitpapra* (Hind.) *Bucklutulmelic* بقلة الملک (Arab.) *Fumeterre* (Fr.)

FUMARIA OFFICINALIS (Lin.)

Cl. and Ord. Diadelphia Hexandria. Nat. Ord. Corydales. (Lin.) *Gemeiner Erdrauch* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. iii. p. 867.

The Tamool practitioners do not appear to be acquainted with this medicine, and of course have no name for it. I found, however, the dried plant in a native druggist's shop at Trichonopoly; and on showing it to an intelligent Mahometan doctor, he immediately told me that it was شاهترہ *Shahtra*, which is the Persian name of the plant. The hakeems consider it as diuretic, and as useful in maniacal

cases, and the modern Arabians place it amongst their *Mufuttehat* مفتحات (Deobstruentia), and *Mooshitat sufra* مسهلات صفرا (Cholagoga).

Dr. Cullen says, that fumatory is tonic, and Dr. Thornton is of opinion, that it is extremely useful in leprous * affections. The ancients prized it much, particularly Galen, who in speaking of it has these words, "urinam biliosam multam provocat; sanatque jecinoris obstructiones et debilitates." The juice of the green leaves have been given to the quantity of two ounces twice daily, but the virtues also remain in the dried plant, particularly the leaves, which in their succulent state have a saline and bitter taste: with all this, I perceive, that it has no longer a place in the London Dispensatory; Alibert too has neglected it in his "New Elements of Therapeutics"; Deslongchamps, however, still retains it in his "Manuel des Plantes Usuelles," (vol. ii. p. 54.) and speaks of its virtues in glandular obstructions. Fumitory is too well known to require a botanical description here; it is a common weed in our cornfields; and like many other medicines has had its day of good repute. Hoffman preferred it to many others, as a sweetener of the blood, and Boerhaave had faith in it in obstinate jaundice. What the Arabians thought of it in former times the reader will find, by perusing the "Canons of Avicenna," under its proper Arabic title قانون في الطب.

Murray in his Appar. Med. speaks fully of the use and virtues of fumatory in scabies, herpes, lepra, &c. See vol. ii. p. 580, 581, see also Leidenfrost's Dissertation "*de succis herbarum expressis.*"

* See Family Herbal, p. 61.

LXXX.

GALANGAL, GREATER. *Pēre árétéi* பேரரத்தை (Tam.) *Doombrāstácum* (Tel.) *Máhá kālooa* (Cyng.) *Khúsroodāroo* خسرودارو (Arab.) *Khoolinjān* خولنجان (Hind. and Duk.) *Galanga* (Port.) *Lanquas* (Mal.) *Sŭgăndhă* सुगन्ध (Sans.)

ALPINIA GALANGA (Lin. Spec. Plant. Ed. Willd. i. 12.)

Cl. and Ord. Monandria Monogynia. Nat. Ord. Scitamineæ. *Galgant Alpine* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. i. p. 12.

GALANGAL, LESSER. *Sittarittie* சித்தரத்தை (Tam.) *Pānkejur* پان كي جر (Duk.) *Koodakalooa* (Cyng.) *Sanna Doomprastacum* (Tel.) *Kust tulk* قسط طلق (Arab.) *Rastma* (Sans.) *Lanquas-kitsjil* (Mal.)

The plant now fixed on, as the alpinia galanga, by Willdenow, was the maranta galanga of Linnæus, but removed into the genus amomum from not agreeing in general with maranta as described by Linnæus. Swartz first suggested that it was properly an alpinia, and Willdenow confirmed the opinion.

After a minute examination of the root called *sittarittie* by the Tamools, and *sanna doomprastacum* by the Tellinghoos, I think there is no doubt but that it is what has been called lesser galangal, and which we are told by Geoffroy, differs considerably

from the greater galangal, "MINOR, odore aromatico fragrante; sapore acri aromatico, subamaricante, pungenti et fauces exurente, piperis aut zingeberis modo—MAJOR, est odore et sapore longe debiliore, et minus grato."

The lesser galangal, which is the *Lanquas-kitsjil* of the Malays, besides being more warm and fragrant than the greater, is more highly prized by the Indians, as a stimulant and stomachic, and may moreover be distinguished by its colour, on the outside being browner and in the inside reddish; whilst the greater galangal root is brownish on the outside and of a dirty white within, and is covered with rings about one fourth of an inch distant. The two galangals are natives of China *, where the lesser is called *lauandon;* and both grow in the province of Xanxy: as medicines they are there held in high estimation, particularly the lesser, which the natives of that country consider as an antidote to poison. They also grow, according to Marsden, in Sumatra †, and they are much prized and cultivated in Java.‡ They are both common in the Indian bazars, and are prescribed by the native doctors to warm the habit in cases of dyspepsia; they moreover consider them as useful in coughs, given in infusion.

The alpinia galanga, whose root has now been fully ascertained to be the greater galangal, or the galanga major of Rumph. (Amb. 5. t. 63.) the reader will find very well botanically described by Dr. Roxburgh in his Flora Indica. (p. 5.) It is a perennial plant, with sessile leaves, broad *lanceolar*, *pan-*

* See Voyage to Madagascar, &c. by Abbé Rochan, p. 361, 362.

† See Marsden's Sumatra, p. 75.

‡ See Arom. Hist. Garcia ab Horto, p. 159.

nicle terminal, *lip* oblong, unguiculate, *apex* bifid, *capsule* obovate, smooth, seeds few. The *root*, the part used in medicine, is tuberous, possessing a faint, aromatic smell, and strong pungent taste, like a mixture of pepper and ginger: so much for the greater galangal root, which by the way appears to have been first sent fresh to India from Bencoolen by Dr. Charles Campbell for the botanical garden of Calcutta; and where the plants now thrive well, and are in blossom during half the hot season. In a note at the end of the article alpinia galangal in the Flora Indica, the enlightened Mr. Colebrooke observes, "that the root of this plant being no doubt the galanga major of the druggists, it is in consequence the *culinjan* of the Hindoos, or rather, in Hindee." But then the question comes to be, of what plant is the lesser galangal the root? for it is an article of ten times more value than the other, at least in India: is it the root of a costus? an amomum? or what? Forskahl, in his *materia medica kahirini*, places galangal which he calls عقاربي خولنجان amongst the aphrodisiacs; as he also does another medicine which he terms لوفاح ابو نافع *Loufa abunafu*. Eight species of alpinia are growing in the botanical garden of Calcutta, where they thrive well.

LXXXI.

GALBANUM. *Beerzud* بيرزد (Pers.) *Barzud* بارزد (Arab.) *Bireeja* (Hind.) also قنده (Hind.) *Galbanum* (Fr.) *Mutterharz* (Ger.)

BUBON GALBANUM (Lin.)

Cl. and Ord. Pentandria Digynia. Nat. Ord. Umbellatæ (Lin.) *Galban Bubon* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. i. p. 1439.

I hesitated some time about giving galbanum a place in this work, on finding that it did not appear to be at all known to any description of native medical men on the coast of Coromandel; I have since learnt, however, that it is brought from the Cape of Good Hope or Syria, to Bombay * as an article of trade, whence it is sent to China; it has besides got a Hindooie name, which proves that it has found its way to the higher provinces of India.

Galbanum is got by wounding the stem of the plant, when the cream-coloured gum resin flows out of it; it has a peculiar strong odour not unlike that of turpentine, and a somewhat nauseous bitter taste. "The plant is perennial, rising to the height of thirteen or fourteen feet, with lower leaves nearly tripinnate on vaginant foot-stalks; the uppermost almost simple, trilobed, thickish, irregularly serrated, and of a greyish colour: the flowers are all fertile; the petals yellow with inflected tips."

Dr. Cullen speaks of galbanum as having been recommended for favouring the suppuration of inflammatory tumours, a virtue also noticed by Celsus†; it is deobstruent, antispasmodic, and expectorant, Mr. Thompson thinks ranking betwixt gum ammoniac and assafœtida, it is no doubt a most valuable stimulant of the intestinal canal and uterus, and is found to allay that nervous irritability which often accompanies hysteria. The dose from ten grains to a drachm, in pills.

* See Elmore's Directory to the Trade of India, p. 223. also Macgill's Travels in Turkey, vol. ii. p. 173.

† Vide Cels. lib. v. chap. iii.

The Arabians have placed galbanum amongst their discutientia مجللات D'Herbelot* informs us, that the tree which produces galbanum in Persia is there called *Ghiarkhust* غیارکست it was by the Greeks named *Metopion* or rather by the *Pastophori;* and also Mendesium† from the city of Mendes: it is amusing to remark the different opinions that are given of the same thing in different countries; however highly, and I believe justly, valued galbanum is in England, the learned and much respected Alibert‡, in speaking of it, says, that he has but little faith in the various opinions given of it by many authors. The ancients considered galbanum, in addition to its other virtues, to possess peculiar qualities, "Nam si cantharidas aliquis ebibit, panaces cum lacte contusa, vel galbanum vino adjecto dari, vel lac per se debet." (Vide Cels. lib. v. cap. xxvi.) Pliny tells us that it was useful in painful labours, but that it was pernicious in strangury. (Nat. Hist. lib. xxiv. cap. v.) Murray, in his admirable work on the materia medica, in speaking of galbanum, says, "Viribus proxime ad gummi ammoniacum accedit: sed galbanum calidius est magisque stimulat." (Appar. Med. vol. i. p. 388.)

LXXXII.

GALLS. *Māchákāi* மாசாக்காய் (Tam.) *Māphul* மாபுல் (Duk.) *Afis* عفص (Arab.) *Māzu* مازو (Pers.) *Galhas* (Port.) *Majouphul* (Hind.) *Māchikāi* (Tel.) *Maju-phăl* (Sans.) *Massaka* (Cyng.) *Noix de Galles* (Fr.) *Gallapfel* (Ger.) *Galla* (It.) QUERCUS INFECTORIA (Oliv.)

* See his Bibliotheque Orientale, p. 175.
† See Diosc. lib. i. c. 71, 72.
‡ See his Elemens de Therapeutique, vol. ii. p. 556.

Cl. and Ord. Monoecia Polyandria. Nat. Ord. Amentaceæ. *Færber-eiche* (Nom. Triv. Willd.)

It would seem to have been that distinguished traveller Olivier, who first distinctly pointed out that it is from the quercus infectoria, that galls are obtained; and are a kind of vegetable wen produced by the morbid excitement, occasioned by the maggot insect (cynips quercus folii, Lin.). The quercus infectoria may be found growing throughout all Asia Minor. Captain M. Kinneir * says, that the tree is common in *Kurdistan* and *Armenia*: and I see by a valuable little work, entitled Remarks on the Husbandry and Internal Commerce of Bengal, that galls might be furnished, as an article of trade, from India to England. Pennant † speaks of them as a product of Moultan; and we know that Gen. Hardwicke ‡, in the narrative of his journey to Sirinagur, found this quercus growing in the neighbourhood of *Adwanie*. I am, notwithstanding, much inclined to think that the greater part of the galls found in Indian bazars grow in Persia, and are brought to the Peninsula by Arab merchants; though it would appear, by what Forskahl says, that they are not a product of Arabia: what are called the Aleppo galls are the best. Captain Kirkpatrick, in his account of the kingdom of Nepaul (p. 20.), informs us, that he found at *Jurzhoory*, in that country, a sort of gall, of very powerful astringency, growing on a tree resembling the ash.

The species infectoria seldom rises higher than six feet, the leaves are smooth, obtusely toothed, and of a bright-green colour on both sides; it has an elon-

* See his Geographical Memoir of Persia, p. 258.
† See his View of Hindoostan, vol. i. p. 37.
‡ See Asiatic Researches, vol. vi. p. 374.

gated acorn, two or three times longer than the cup which is sessile, downy and scaly; the gall comes out at the shoots of the young boughs, those that come out first, Mr. Virey * tells us, are the best, they are known in trade by the terms, *black*, *blue*, or *green galls*; those afterwards gathered are inferior from being pierced, and are called *white galls*.

Galls are prescribed by the native practitioners in India, in dysentery and diarrhœa; they are also given as tonics in intermittent fever: the powder moistened with a little water is applied to chopped nipples, and made into a soft ointment: it is a useful application to blind piles. Internally, galls have been given in doses of from gr. viii. to ℈i. Eleven species of quercus were growing in the botanical garden of Calcutta, in 1814, all oriental plants except two, the *Robur* and *Phellos*. No natural substance, that we are acquainted with, contains so large a proportion of tan as the gall-nut, amounting, according to the experiments of Sir H. Davy, to about three fourths of the soluble parts of the nut. See Philos. Trans. for 1803, p. 233. For further and curious information respecting galls, the reader is referred to Cuvier's celebrated work, "Règne Animal," p. 132.

The ancients believed galls to have the effect of purging or purifying the skin, when given in conjunction with honey. "Cutem purgat mel, sed magis si est cum galla;" in another part Celsus says, "Misy quoque et galla, si paribus portionibus misceantur, corpus consumunt." (Cels. lib. v. cap. xvi. xxii.)

* See Histoire Naturelle des Médicamens, p. 315.

LXXXIII.

GAMBOGE. *Mukki* ಲಕಕಿ (Tam.) *Ossara rewund* عصارا ريوند (Arab.) *Gokkatoo* (Cyng.) *Passapoovenny* (Tel.) *Gomme gutte* (Fr.) *Gomarom* (Port.) *Gutte gum* (Dut.) *Gummigutt* (Ger.) *Gomma gotta* (It.)

STALAGMITIS GAMBOGIOIDES (Kœnig.)

Cl. and Ord. Polygamia Monoecia. Nat. Ord. Tricoccæ. *Indischer Guttabaum* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. iv. p. 280.

The gamboge which is found in the Indian bazars, but for which I have not been able to get a Sanscrit name, is no doubt an imported drug from Siam, from the kingdom of Macassar (according to Beckman, voyage to Borneo), from the province of *Kiangsi** in China, or from Ceylon, where it is got from the gambogia gutta (Blackwal, tab. 393); and it is more than probable, that it was from a description of the tree in the last mentioned country, that Kœnig composed his genus stalagmitis. At Siam, we are told, that this gum resin is obtained from the tree which produces it, by breaking the leaves and young shoots; in Ceylon, on the other hand, the bark of the tree is said to be wounded with a sharp stone; it is also an export from Cochin-china.

It is well known that there are several trees which yield yellow gum-resins, resembling much the gamboge of the shops; such as gambogia gutta (Lin.),

* See Abbe Rohan's Voyage to Madagascar, p. 3 2.

garcinia celebica (Lin.), hypericum pomiferum* (Roxb.)

I have given the stalagmitis gambogioides (Kœnig) as the tree from which the gamboge is procured; as it would appear to be that recognised as such by several high authorities; but there seem to be still just doubts on the subject. Dr. S. Dyer, when garrison surgeon of Tellicherry, a gentleman to whom I owe much useful information, regarding the products of Malabar, told me that he some years ago actually obtained the true gamboge from a tree growing on the *Cotiady ghaut;* and amongst the mountains of *Wynade;* and that he was the first who transmitted this valuable substance to Dr. Roxburgh: it has since been ascertained, that gamboge trees are to be met with, not only throughout the whole extent of Malabar, but in the *Bulam* country, and all along the ghauts which skirt *Canara.* I do not find that any botanical description of the tree has yet been distinctly given. The much to be lamented Dr. White, of the Bombay establishment, was inclined to bestow on it the scientific appellation of gambogia guttifera. I have never seen it, and have only been informed by Dr. Dyer, that it is nearly two feet in circumference; that the branches grow mostly near the top, in a conical form; that the leaves which are about four or five inches long, oval, and pointed, when cut across, give out the yellow juice, and that the Canarese name of the tree is *hunda-poonar,* the flower is small and yellow.

It is a curious fact, that the natives, previously to Mr. Dyer's calling their attention to it, had not par-

* See Asiatic Researches, vol. vi.

ticularly noticed this substance*; the tree would appear to grow in the thickest jungles, and generally at a great distance from the villages of the inhabitants.

Gamboge, though inodorous and nearly insipid to the taste, is one of the most drastic cathartics we have. It is prescribed, by European practitioners, as a hydragogue in dropsies, and for the expulsion of worms, in doses of from three to fifteen or twenty grains triturated with sugar, or made into pills with soap, calomel, or bitter extracts. Orfila has given gamboge a place amongst his poisons. Before concluding this article, I must observe, that there had long existed a strange mistake that the *koorka-poollie* of D'Acosta, or the *coddam pulli* of Rheed (garcinia gambogia, Willd.), was the tree which produces the true gamboge; that this is not the case, however, was clearly proved by Dr. White, whose account of the *koorka-poollie* was published in the Edinburgh Medical and Surgical Journal.

There is but one species of the genus stalagmites, which is our present article: of the genus, Willdenow says, "*hermaph. cal.* 4-phyll. *cor.* 4-petala. *stam.* 30, receptaculo quadrangulo carnoso inserta, *styl.* crassus, *stigma* quadrilobum. *bacca.* 1 locul. stylo coronata trisperma." "*Masculi. cal. cor. et stamina* hermaphrod."

The gamboge-tree of Siam, is a middling sized one, with dusky-coloured green leaves, which are ovate, opposite, entire, even, and on short petioles: the male flowers, being either in distinct clusters, or mixed with the hermaphrodite, which are axillary;

* Since writing the above, Colonel Wilks informs me, that this yellow gum resin had been previously noticed by the pioneers of Lord Wellington's army.

the hermaphrodite, as Mr. Thompson informs us, in his excellent account of the plant, are in axillary whorls, or on the joints of the smaller branches, sometimes mixed with the male flowers, sometimes in opposite gems; the fruit is a smooth, round berry, whitish, or rose-coloured, and containing several long triangular seeds. I perceive in Orfila, this opinion regarding gamboge, that its poisonous quality does not depend on absorption; but upon its "*action locale énergique.*" (See vol. ii. p. 24.)

LXXXIV.

GARLIC. *Vūllay poondoo* (Tam.) *Soodooloonoo* (Cyng.) *Velligudda* (Tel.) *Bavangpootie* (Malay.) *Belluly* (Can.) *Lássun* لهسن (Duk. and Hind.) *Seer* سیر (Pers.) *Soom* ثوم (Arab.) *Loshun* (Beng.) *Lăsŭnă* लशुन (Sans.) *Ail* (Fr.) *Knoblauch* (Ger.) *Ajo Sativo* (Span.) *Bawang* (Jav.) *Késun* (Bali) Σκοροδον (Gr.)
ALLIUM SATIVUM (Lin.)

Cl. and Ord. Hexandria Monogynia. Nat. Ord. Spathaceæ (Lin.) *Starkriechendes* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. ii. p. 68.

The strong-smelling, pungent, acrimonious bulbs of the allium sativum, form an almost constant ingredient in the curries and other dishes that are used by the native Indians. As a medicine, the Hindoo doctors prescribe garlic to promote digestion, quicken the circulation, and warm the habit; they also consider it as a useful expectorant, particularly in that kind of asthma which they call *mandara cāshum;* which signifies the asthma of cloudy weather.

Garlic is sometimes used as a rubefacient by European practitioners; and is no doubt a useful stimulant, expectorant, and diaphoretic, and may also be considered as anthelmintic and diuretic. In the Dublin Pharmacopœia there is a preparation of it, *syrupus alii*, which given in doses of two drachms is an excellent remedy in pituitous asthma. Dr. Rush supposed garlic had some effect in preventing the yellow fever; the Arabians place it, ثوم amongst their ملطفات attenuentia. Garlic is a native of Sicily, where it grows wild, it is now cultivated in Hindoostan, and thrives admirably in Nepaul*; our article with six other species grow in the botanical garden of Calcutta. For much curious and classical information regarding garlic, the reader may consult Mr. Phillips's work on Cultivated Vegetables, vol. ii. p. 21. I shall merely here state before concluding, that in a climate like India, where dyspepsia is frequent, and perhaps rendered still more so amongst the natives, by their living so much on a vegetable diet, garlic, by supplying a gentle and grateful stimulus to the stomach, is highly useful: the Romans had an idea, that it in a peculiar manner gave strength to the human frame; and Sir William Temple in his Treatise on Health, observes, that of all plants, garlic affords most nourishment, and supplies spirits the best to those who eat little flesh. Celsus gives garlic a place amongst those things, which warm the habit and open the belly. (Vide Cels. de medicina, lib. ii. cap. xxvii. xxix.) The Hindoos are in the habit of preparing a kind of expressed oil from garlic, called in Tamool *vullay poondo unnay*, it is of a stimulating nature, and ordered internally in agues, and externally in palsy and rheumatism.

* See Captain Kirkpatrick's Account of Nepaul, p. 129.

LXXXV.

GINGER, DRY. *Sookkoo* சுக்கு (Tam.) *Sont* سنت (Duk. and Hind.) *Inghuroo* (Cyng.) *Alia* (Malay.) *Jai-aking* (Jav.) *Jahetuh* (Bali.) *Sonti* (Tel.) *Zungebeel* زنجبيل (Pers.) *Sonty* (Can.) *Gengibre* (Span.) *Wooraka* (Ternat.) *Gora* (Tidor.) *Siwe* (Amb.) *Sohi* (Band.) *Sŭnthī* शुण्ठी (Sans.) *Zenzero* (It.) *Gingembre* (Fr.)

GINGER, GREEN. *Injie* இஞ்சி (Tam.) *Ammoo Inghuroo* (Cyng.) *Udruck* ادرک (Duk. and Hind.) *Ullum* (Tel.) *Ardrăkă* आर्द्रक (Sans.) *Zingebeel rutb* زنجبيل رطب (Arab.) *Dschey* (Jav.) *Zungebeel tur* زنجبيل تر (Pers.) *Gingembre* (Fr.) *Ingwer* (Ger.) *Zenzero* (It.) *Ada* (Beng.) AMOMUM ZINGIBER (Lin.)

Cl. and Ord. Monandria Monogynia. Nat. Ord. Scitamineæ. *Aechter Ingwer* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. i. p. 6.

The ginger plant is a native of many eastern countries, but is no where to be found of a finer quality than on the coast of Malabar, it is the *ischi* of the Hort. Mal. (11. p. 21. t. 12.) and the *zingib. majus*, Rumph. (Amb. 5. p. 156. t. 66. f. 1.)

The root is too well known to require particular description here; it has a pleasant aromatic odour, biting taste, and is considered by the native doctors as a valuable carminative and stimulant; they also

recommend it as an external application, mixed with arrack, in paralytic and rheumatic affections; it besides forms an almost constant ingredient in the *cushāiums* (decoctions), which they prescribe for arresting the progress of intermittent fever: dose from g. x to ʒss. Europeans in India, of delicate nerves, frequently use an infusion of ginger in place of common tea; this is either prepared with dry ginger or the green root, cut into thin slices; our article with many other species are growing in the botanical garden of Calcutta.

The Greek name for ginger Ζιγγιβερ was, in all probability, nay certainly, was taken from its Persian appellation زنجبيل. It is indigenous in China, and Mr. Phillips* imagines, as it is common at *Gingi* in that country, that hence may be its name ginger.

In Sir J. Sinclair's Code of Health, (vol. i. p. 233.), we are informed of the virtues which ginger possesses in keeping off the gout, as instanced in the case of Lord Rivers, who took it in large doses for more than thirty years with the happiest effects. The Arabians set a high value on ginger, as do the Persians, supposing it to have the property of clearing the brain; they consequently, in all their works on the Materia Medica, place it amongst their *cephalica* مقويات دماغ.

Much dry ginger is sent to the Coromandel coast from Cochin and Bengal; it is also an export from Nepaul. (See Kirkpatrick's account of that country, p. 205.)

* See his work on Cultivated Vegetables, p. 210.

LXXXVI.

GINSENG. *Yansam* (Chin.) *Garantogues* (Americ.) *Orhota* (Tart.) *Ginseng* (Dut.) *Ginsao.* (Port.) *Ginseng* (Fr.)

PANAX QUINQUEFOLIUM (Lin.)

Cl. and Ord. Polygamia Dioecia. Nat. Ord. Hederaceæ. *Funblattrige Krafftwurz* (Nom. Triv. Willd.) See Spec. Plant. Willd. vol. iv. p. 1124.

This root, which had formerly a place in the British materia medica, but which now, perhaps, is justly discarded, is sometimes, though rarely, brought to India from China, in pieces about the thickness of the little finger, and three or four inches long, which are forked and tranversely wrinkled; it has little or no smell, but a mucilaginous and sweetish taste, accompanied with some warmth, and a very slight degree of bitterness. We are told that the Chinese physicians, ascribe most extraordinary virtues to ginseng, and have written volumes on it: they allege, that it nourishes and strengthens the body, stops vomitings, clears the judgment, removes hypochondriasis, and all other nervous affections; in a word, gives a vigorous tone to the human frame, even in old age. *

The plant is a native of Chinese Tartary, where it has been cultivated from time immemorial, and Mr.

* The reader will find a full and curious account of the virtues of ginseng in a work entitled "Description General de la Chinè." It is a translation from the Chinese, by Joseph Anne Marie de Moyriac de Mailla. Tome xiii. p. 767.

Cutler says, that it grows plentifully in New England, and some of the neighbouring states; but Loureiro has expressed a doubt whether the Chinese ginseng, be the same plant with what the American Indians call *garantogin*, and which the French in Canada use for asthmatic complaints, as a stomachic, and to promote fertility in women: notwithstanding, ginseng has no longer a place in our dispensatory, the French* writers still retain it, chiefly, perhaps, on the authority of Jesuit missionaries; it would appear, by Thunberg's account, to hold to this day its high reputation amongst the Japanese. The reader will find the plant well described by Woodville in his medical botany and by Bernard Jussieu; it has an erect smooth stem, with leaves which arise with the flower stem, from a thick joint at the extremity of the stalk, the flowers are of a yellowish-green colour, the berries are at first green but afterwards turn red, inclosing two hard seeds. In such estimation was the ginseng root held in China in the year 1709, that the Emperor sent an army of 10,000 Tartars in search of it, on condition, that each soldier should give him two catties of the best, and sell the rest for its weight in silver, by this means the Emperor gained 20,000 catties in one year. See Brewster's Edinburgh Encyclopedia, article Ginseng.

* See Alibert's "Nouveaux Elémens de Thérapeutique," vol. i. p. 100.

LXXXVII.

GOAT. *Vul-ādoo* (Tam.) *Bukra* بكرا also *Chéla* (Duk.) *Buz* بز (Pers.) *Khussee* خصي (Arab.) *Chittoo-méka* (Tel.) *Aada* (Mal.) *Ăjă* अज (Sans.)
CAPRA HIRCUS (Lin.)

Goat's flesh is tough and tasteless, though much eaten by the native Indians. The kid is, however, excellent. Goats give a great deal of milk of good quality. See article Milk. *

LXXXVIII.

GRAPE. *Kódimoondrie púllum* கோடிமுந்திரிப்பழம் (Tam.) also *Dividatsi-pullum* (Tam.) *Drāchupundoo* (Tel.) *Booangoor* (Mal.) *Ungoor*

* The vytians have a notion, and it is a strange one, that the flesh of the goat has virtues when eaten in cases of incontinence of urine. What is called the *wild* or *mountain* goat, or *bouquetin*, some have ventured to say was of a different genus from the *capra*, and a link betwixt the deer and goat; but that this is not the case is maintained by Mr. Kendal, in a communication to be met with in the Asiatic Journal for March 1823. (p. 229.) The animal is common in the Hymalaya mountains, where it is called *Pheir*, and is the *capra ibex* of Linnæus; the Germans term it *steinbock*, and the Persians بز كوهي *Buz-kouhee*. In outward form it much resembles the common goat, but is larger, with a smaller head in proportion to its body, and large round fiery eyes; the horns, which are also large, are flattened before, and round behind, and the legs slender; it is peculiarly active, and the flesh of the young is much esteemed as an article of food. A variety of the goat, which is of a red colour, is called *menda* on the Malabar coast.

انگور (Pers. and Duk.) *Drākshā* द्राक्षा (Sans.) *Dakh* (Hind.) *Wéll moodika ghéddie* (Cyng.) *Inúb* عنب (Arab.) *Raisin* (Fr.)

VITIS VINIFERA (Lin.)

Cl. and Ord. Pentandria Monogynia. Nat. Ord. Hederaceæ.

Grapes of various kinds grow in abundance in many parts of India; particularly in the higher tracts and upper provinces; and are considered by the native doctors as cooling and aperient. The French at Pondicherry, in spite of the great heat of the Carnatic, are particularly successful in cultivating them; but no wine is made in India, nor is the fruit dried into raisins as in Europe and Persia. The Arabians and Persians, particularly the latter, though they are forbid wine by the Koran, bestow much pains on the cultivation of the grape; and suppose that the different kinds possess distinguishing medicinal qualities. The juice of the grape, before it is made into wine, they call امعاسين (Arab.) and انگور اب غوره (Pers.); the large black grape, which the Arabians term اصابع الغذاري, the Persians انگور زيتوني, and which in higher Hindoostan is commonly known by the name of *Kalee dakh*, the Mahometan practitioners consider as of a hot and drying nature.

Grapes when dried into raisins, are called in Arabic زبيب in Persian مويز and in Hindoostanie *Kismishe;* which, however, more particularly applies to the raisins of that grape from which the famous *Shiraz* wine is made; by *Noureddin Mohammed Abdullah Shirazy's* work on the Materia Medica, it appears that the Persians conceive raisins to be in a high degree emollient and suppurative, and order them to the quantity of ten *direms*.

Six species of vitis were growing in the botanical garden of Calcutta, in 1814. See more on this subject under article Wine in this Chapter. See also article Raisins.

LXXXIX.

GUM AMMONIAC. *Úshék* اشق (Arab. and Duk.) also *Féshook* (Duk.) *Semugh bilshereen* صمغ بل شرين (Pers.) *Gomme ammoniaque* (Fr.) *Ammoniak* (Ger.)

HERACLEUM GUMMIFERUM (Willd.)

Cl. and Ord. Pentandria Digynia. Nat. Ord. Umbellatæ.

This gum resin appears to be little known in the interior parts of the Indian peninsula; and is only occasionally prescribed by the hakeems, who have become acquainted with it, through the medium of Arabic and Persian books. Woodville gives no account of the plant whatever, nor do I believe that it has hitherto been scientifically, or rather very accurately, described. Willdenow, however, had no doubt but that gum ammoniac was obtained from the heracleum gummiferum*, and the London College, on his authority, admitted it as the ammoniacum plant; notwithstanding all this, it would seem, that this distinguished botanist could not obtain any of the gum resin from a plant, which he reared from the seed found amongst gum ammoniacum of the shops; so that the matter is still involved in doubt. Mr. Jackson† tells us, that the gum ammoniacum plant,

* See Willd. Hortus Berolini, vol. i. p. 53, 54.
† See his Account of Morocco, p. 83.

called by the Arabs *Feshook*, grows in Morocco, that it resembles the fennel, but is larger, and we know that Pliny, (I. xxii. c. 23.) mentions ammoniacum as the gum resin of a species of ferrula: Geoffroy has attempted to account for the name that has been given to this article, in the following manner: "Planta vero nascitur in ea Africæ parte, quæ Egypto ad occasum adjacet; quæque hodie dicitur regnum de barca, in quo fuit olim templum celeberrimum Jovi *Ammonii* dicatum, unde gummi nomen."

Mr. Jackson, in speaking of the *Feshook* plant, says, that the gum ammoniac is procured from incisions made in the branches, by which means a lacteous, glutinous juice is obtained, which hardens into gum ammoniac.

Lieutenant Colonel John Johnston, C. B. in his Journey from India to England, through Persia, Georgia, Russia, Poland, &c. in the year 1817, states, that he found the plant which yields the gum ammoniac growing in the stony plains, within half-a-mile of the fortification of *Yezdehkhaust* in Persia, he adds, that it grows to about six feet in height; some of the stems being of a dark colour, like ripe sugar-cane, and others of a light green tinged with lake-colour near the joints. (See his work, pp. 93, 94.) It would appear, that he also saw some of the trees growing near *Magen* in Persia.

For a botanical account of the plant which was reared from the seed above mentioned, and to which the name of heracleum gummiferum was given, the reader may consult the last edition of the London Dispensatory. The gum resin itself is too well known to require a particular description here; when good it is of a pale yellow colour, having a faint but not unpleasant odour, with a bitter, nauseous, yet

somewhat sweet taste: externally applied, it has been considered a discutient and resolvent; internally, it is one of our most valuable deobstruents and expectorants: the dose of the substance from gr. x. to ʒss. that of the lac. ammon. (Mist. Ammon. Lond.) from ʒss. to ʒiss. Dr. Paris informs us, that in combination with rhubarb, ammoniacum is a valuable medicine in mysenteric affections, by correcting viscid secretions.

In the southern parts of Arabia, the tree which yields the gum ammoniac is called *tursoos* طرثوث, the Persians term it *derukht ushuk* درخت اشك, and the gum resin itself they place amongst their محللات (discutientia); for their more particular opinions respecting it, the reader may consult a Persian work entitled معدن الشفاي سكندر شاهي, or the Mine of Remedies, by Beva Ben Khuas Khan, A.D. 1512, dedicated to Secunder Shaw II.

Mr. Grey, I perceive, in his Supplement to the Pharmacopœias (p. 27.), expresses a notion that gum ammoniac may be, or is obtained from, the ferula Persica, the tree which Willdenow supposes to be that which yields the sagapenum. According to Bracconot, this gum resin is a compound of 70·0 resin, 18·4 gum, 4·4 glutinous matter, 6·0 water, 1·2 loss.

XC.

GUM ARABIC, INDIAN. *Vullām pisin* வேலம்பிசின் (Tam.) *Vélágábánkā* (Tel.) *Kapittha* (Sans.) *Kavit ka gond* کهویت کا کوند (Duk.) *Samagh arebee* صمغ عربي (Arab.) *Jewool*

latoo (Cyng.) *Gomme arabique* (Fr.) *Arabischer gummi* (Ger.)

FERONIA ELEPHANTUM (Roxb.)

Cl. and Ord. Decandria Monogynia. Nat. Ord. Putamineæ.

There are several gums which resemble the true gum arabic, or that of the acacia vera, which grows in almost every part of Africa; but perhaps none of them comes nearer to it than the *vullām-pisin* or gum of the feronia elephantum of Roxb. (or what is called the wood-apple tree), and which is commonly used for medicinal purposes by all the practitioners of Lower India. What is termed the *babul* tree in Bengal (Acacia arabica, Willd.), *Pāti* in Sumatra, *Akakia* اقاقيا (Arab.) *Karoovēlum* (Tam.) *Núlla tuma* (Tel.) *Mughilān* مغيلان (Pers.) also furnishes a great deal of gum which is employed in lieu of gum arabic: it is the same tree, as far as I can learn, that Dr. Wittman, in his Travels (p. 231.), mentions as yielding much gum arabic in Turkey. The Egyptians, by Forskahl's account, call gum arabic صمغ طوري from the city of Tor where it is obtained; we learn from Niebhur's Travels (vol. i. p. 99.), that a considerable quantity of gum arabic is produced in the neighbourhood of Mount Sinai, and brought for exportation to Alexandria. In Morocco* a great deal of it is procured, especially about *Bassel-wed* and *Bledhummer* in the province of *Abda*, where the tree is called *Attaleh*.

The Tamool practitioners prescribe a solution of gum arabic to relieve tenesmus in bowel affections, and as we do in other cases requiring demulcents.

* See Jackson's Account of Morocco, p. 83.

The feronia elephantum is the *balong* of the Portuguese, and is called in Hindoostanie and Bengalie *kuth-bel.* The fruit of the feronia elephantum (wood-apple) is eaten by the Indians, the tree is pretty large, erect, branches few and irregular, leaves feathered with an odd one, from three to five inches long. It has male and hermaphrodite flowers. (See note* below, see also Corom, Plants, vol. ii. p. 21.)

XCI.

GUM TRAGACANTH. *Vādomocóttay pisin* வாதமடுக்கொட்டைபிசின (Tam.) *Káttīra* كتيرا (Duk. and Hind.) *Sámághulkătād* صمغ القتاد (Arab.) also *Kaseera* كثيرا (Arab.) *Gommi astraganti* (Fr.) *Traganth* (Ger.)

ASTRAGALUS VERUS (Olivier.)

Cl. and Ord. Diadelphia Decandria. Nat. Ord. Papilionaceæ. *Gemeiner Traganth* (Nom. Triv. Willd.)

The *Vytians* imagine this gum to have the effect of improving the state of the blood, and prescribe it in mucilage, in doses of twenty or thirty grains. What of it is occasionally found in the Indian bazars

* The following is a list of trees from which, according to Dr. Francis Hamilton, gum, simply so called, may be procured in Mysore. *Dindiga* (andersonia panshmoum), *bewa* (melia azadirachta), *muruculu* (chirongia glabra), *mavena* (mangifera Indica), *avaricay* (cassia auriculata), *bayla* (ægle marmelos), *jala* (shorea robusta), *chadacalu* (chloroxylon dupada,) *betta tovary* (bombax gossypium (Lin.). *Amsa*, also *Kumarkuni*, is the Hindoo name of an opaque gum sold in Upper India, and said to be a good medicine in cases of *oxæna* used externally. Hamilton's MSS. on the Puraniya District.

is brought from Alexandria by way of the Red Sea. The shrub which produces it is said to grow in Candia and Socotra; but it would appear to be also a native of Persia, where it is called *kum* كم (see Morier's First Journey through Persia, p. 231.) The Arabians term it كتيراء, and place the gum itself amongst their Aphrodisiaca مجهيات (*Mobehiāt*).

Good gum tragacanth is whitish coloured, brittle, inodorous, and has a very slight bitter taste; it is but partially soluble in water, which rather swells than dissolves it; it is considered as an useful demulcent. We are told by Virey, in his "Histoire Naturelle des Medicamens," (p. 282.) on the authority of Labillardiere*, that gum tragacanth is actually got from the astragalus gummifera; it was long supposed to be obtained from the ast. tragacanth, but there is now little doubt, but that it exudes from the ast. verus. Three species only of this most numerous genus grow in the botanical garden of Calcutta; one is a new species, the other two are the *hamosus*, and *carolianus*; the second is a native of Persia. Mr. A.T. Thomson, in the last edition of the London Dispensatory, observes that the *kattira gum* from India has been found not to answer the purposes of the ordinary tragacanth; *kattira*, however, is no doubt the name in Hindoostanie and Dukhanie of the real gum tragacanth. Considering the great number of gums which are to be met with in the Indian bazars, it is not unlikely that what Mr. A. T. Thomson had transmitted to him, was not the genuine article. For that able botanist's description of the ast. verus, I refer the reader to his London Dispensatory. The ancients considered tragacanth as a vulnerary. (Cels. lib. v. cap. 11.)

* See Journal de Phys. for 1790.

XCII.

HARE. *Mosél* (Tam.) *Khurgoosh* خرگوش (Duk.) *Arnub* ارنب (Arab.) *Sussa* (Hind.) शश *Sasa* (Sans.) *Koondelo* (Tel.) *Lièvre* (Fr.)

LEPUS TIMIDUS (Lin.)

The hare is common in India, and is a much fleeter animal than in Europe; though smaller, it differs but little in appearance from the European hare, but Dr. F. Hamilton is inclined to make it a new species, *Lepus Khurgosa;* as food it is often dry; the *Vytians* prescribe the flesh for incontinence of urine.

XCIII.

HELLEBORE, BLACK. *Kádágárōganie* கடுகுரோகணி (Tam.) *Katookarōganie* (Tel.) *Caloorana* (Cyng.) *Kăturōhĭnī* कटुरोहिणी (Sans.) *Kalikootkie* كالي كتكي (Duk.) *Kherbek aswed* خربق اسود (Arab.) *Kherbeck siya* خربق سیاہ (Pers.) *Niestwortel* (Dut.) *Helleboro* (Port.) *Hellebore* (Fr.) *Schwartz Niesswurzel* (Ger.)

HELLEBORUS NIGER (Lin.)

Cl. and Ord. Polyandria Polygamia. Nat. Ord. Multisilique (Lin.)

I have given the names *kádágórōganie* and *kalikootkie* as the Tamool and Dukhanie appellations of black hellebore, as the root procured in the Indian bazars, is commonly said to be so; but I have great doubts of it, and here offer a caution respect-

ing it, as it by no means agrees in appearance with the black hellebore of the European shops, though it is equally nauseous, bitter and acrid. This root, I mean our article, may be distinguished from the black hellebore, commonly so called, by being quite black *inside* in place of white or yellowish; it is very easily broken, and is usually found in pieces six or seven inches long, with numerous joints, and of a greyish colour outside. I am inclined to think that it is the root of some other species of hellebore, perhaps that very drug, so much celebrated by the ancients, which Woodville tells us, grew in Antycera, and which he supposes was the root of the helleborus orientalis. Virey* seems to be of opinion that the hellebore of the ancients was the white not the black; though he ought to know that Pliny and other writers speak distinctly of both.

The *kádágárōganie*, whatever it may be, grows, by Kirkpatrick's account, in Nepaul, and is there called *kootka* (see his work, p. 182.); it is also brought to India by way of the Red Sea, from Syria; it is much used by farriers as a purge for horses, and also cautiously among the *hakeems* as a drastic cathartic in maniacal cases, and may be purchased in every druggist's shop in Lower India.

Celsus prescribed black hellebore as a purge in mania, it is now seldom used in substance; the root has a nauseous, acrid taste (benumbing the tongue) which is however lessened by keeping. The decoction, Dr. Pearson† thinks, may be given with advantage in cases of insanity, and in certain dropsical affections, in doses of about ʒj. that of the extract is from five to ten grains. White hellebore (vera-

* See his Histoire Naturelle de Medicamens, p. 132.
† See his Practical Synopsis of the Materia Medica.

trum album) I have never seen in India, it has, however, been described to me by a learned Hindoo under the name of *Pidárōganie* (Tam.), but I do not give this with confidence; it is now seldom prescribed owing to the violence of its operation, being at once a most drastic cathartic, emetic and sternutatory, often even in the smallest doses exciting tremors, vertigo, and syncope, and if the dose is large, death. Orfila places both the hellebores amongst his poisons, (vol. ii. part. i. p. 6. 11.) Celsus gave the white in that species of derangement attended with peculiar hilarity of spirits, a practice which has been resorted to with varying advantage in these our days.* The Arabians class black hellebore amongst their cathartics, giving it to the quantity of half a *direm*, and corrected by means of oil of almonds or tragacanth. The white hellebore which they call خربق سفياد they place amongst their emetics; dose half a *direm* corrected by mastich; as a succedaneum, they use the nux vomica. Alibert † speaks highly of the virtues of black hellebore in dropsical cases, in the form of the *pilules toniques de Bacher*. The root of the black hellebore has lately been analysed by MM. Feneulle et Capron; the products, were 1. a volatile oil; 2. a fatty matter; 3. a resinous matter; 4. wax; 5. a volatile acid; 6. a bitter principle; 7. mucus; 8. alumina; 9. gallate of potash, and acidulous gallate of lime; 10. a salt with an ammoniacal base. For the opinion of Pliny, respecting the two hellebores, the reader is referred to his Nat. Hist. (tom. iii. cap. v. p. 20.) "*Nigrum* alii *entomon* vocant alii *polyrrhizon*, purgat inferna; *candidum*

* See G. Kerr's Medical Sketches on the Use of Hellebore in Insanity.

† See his Elémens de Thérapeutic, vol. i. p. 290—293.

autem vomitione, causasque morborum extrahit." * The black hellebore plant is described in the London Dispensatory. The white is a native of Greece, and is no doubt the Ελλεβορος λευκος of Dioscorides; of the Cl. and Ord. Polygamia Monœcia, and Nat. Ord. Coronariæ (Lin.) I have mentioned above Celsus's opinion regarding the black and white hellebores, I shall here subjoin his words, in speaking of what purges are to be given in particular cases; he says, "Ut cum veratrum *nigrum*, aut atra bile vexatis, aut cum tristitia insanientibus, aut iis quorum nervi parte aliqua resoluti sunt datur:" again "In tristitia, nigrum veratrum dejectionis causa; in hilaritate *album* ad vomitum exitandum dari debet." Lib. ii. cap. xii. and lib. iii. cap. xvi.

XCIV.

HENBANE SEED. *Kōrásánie ōmum* கொராசாணி ஓமம் (Tam.) *Khorassanie-ajooan* خراساني اجوان (Duk. and Hind.) *Buzirulbunj* بزرالبنج (Arab.) *Urmanikoon* ارمانيكون (Arab.) *Korassanie* (Cyng.) *Adas-pedas* (Mal.) *Adas* (Jav.) *Jusquiame* (Fr.) *Bilsenkraut* (Ger.) also *Sikrān* سيكران (Arab.)

HYOSCYAMUS NIGER (Lin.)

Cl. and Ord. Pentandria Monogynia. Nat. Ord. Luridæ.

* In the same chapter, Pliny observes, that the black hellebore is serviceable in palsy, lunacy, and dropsy; the white in epilepsy, vertigo, melancholy, elephas, leuce, and the filthy leprosy. By elephas, here, I presume is meant the Cochin or Barbadoes leg, as distinct from elephantiasis.

I have never seen the plant in India; but the small, flat, brown seeds of it, are common in the medicine bazars, and are prescribed by the *Hakeems* to soothe the mind, procure sleep, and keep the bowels gently open, in cases of melancholy and mania; what of the article is found in India is brought from Turkey, where the seeds are called *benge*, and hence, according to D'Herbelot*, the word *bang*, which the seed is sometimes termed in the upper provinces of India, and which is used by the Mahometans of the lower districts, to express an intoxicating drug; but is generally applied to the bruised and prepared leaves of the Cannabis Indica (Willd.)

Celsus† as well as Stoerck, gave henbane to procure sleep in mania, and Pliny speaks of its virtues in various ways:—"Succus hyoscyami etiam *sanguinem excreantibus*: nidor quoque accensi *tussientibus*." (vol. iii. cap. v. p. 70.) "Succus hyoscyami cum axungia *articulis*." (cap. xi. p, 94.) "Hyoscyamum *genetalibus* medetur." (cap. viii. p. 87.) He tells us that there are different kinds of henbane, but that the black chiefly grew in *Galatia*. (cap. iv.) Forskahl, in his Materia Medica Khairina, mentions this medicine as being brought from Greece to Egypt in his day, and administered to procure sleep, adding, that it might with safety be given to children. Modern physicians employ it as an anodyne in cases in which the binding influence of opium might be injurious: the extract made from the fresh leaves, and the tincture made from the dried leaves, are used, the dose of the first is from grs. iss. to as far as grs. xx. that of the tincture from 5 to 25 drops. In

* See D'Herbelot's Bibliotheque Orientale, p. 184.
† Vide Cels. lib. iii. cap. xviii.

large doses henbane is apt to produce many bad symptoms, often ending in delirium, great debility, convulsions and death. Mr. A. T. Thomson tells us, that united with colocynth, he has found henbane particularly useful in colica pictonum: externally it has been applied to allay irritation in over-sensible parts. The modern Arabs place henbane amongst their Narcotics مخدرات (*Mokederrat*). The tree, though a native of Europe, would appear to be well known in Arabia, where it is called *arista* اريسطا and by the Persians *bungh* بنگ; it is an indigenous annual, with a long tapering, compact root, sessile, alternate leaves, and an embracing stem.

In eastern countries, as far as I can learn, the seeds alone appear to be known medicinally, the leaves when fresh have a strong fœtid odour, but that goes off when the plant is dried; henbane yields its virtues completely to diluted alcohol. In the leaves of the plant Brande ascertained the presence of a peculiar and highly poisonous salifiable base, which he calls *hyoscyama** ; with the acids it forms characteristic salts; and crystallizes in long prisms. Alibert† recommends "des boissons acides," for such as had been poisoned by henbane.

Murray, in his Appar. Medic. vol. i. p. 655, has treated fully of henbane, and its use in convulsions, palpitation, mania and melancholy; with regard to its anodyne powers, he says, "opio ipso, in somno et quiete inducenda, aliquando potentius fuit!!"

* See Brande's Manual of Chemistry, vol. iii. p. 116.

† See his Nouveaux Elémens de Thérapeutique, vol. i. p. 425.

XCV.

HOG. *Punnie* பன்றி (Tam.) *Púñdie* (Tel.) *Soor* سور (Duk. and Hind.) *Khinzeer* خنزير (Arab.) *Khook* خوک (Pers.) *Vărāhă* वराह (Sans.) *Babi* (Mal.) *Cochon* (Fr.) also *Sūkără* शूकर (Sans.)
Sus Scorfa (Jonst.)

The common breed of hogs which is met with in India is not much prized, the animal is long legged, and is not easily fattened; a better kind is often brought from China, with shorter legs; but is still very inferior to the tame hog of Europe. The Indians, like the Chinese, are very careless with regard to the feeding of their pigs, which are generally allowed to run about the streets; and are, I am inclined to think, so neglected, most unwholesome food, perhaps contributing to produce, in conjunction with badly prepared salt-fish, some of the worst kinds of cutaneous diseases. The Mahometans of course eat no pork, nor will admit even the name of it into any of their books. For the delicate, the flesh of the hog in all its forms, is certainly improper, being too rich, and consequently apt to nauseate and cloy the stomach; for the strong or labouring people it is an excellent food. The sus scorfa is a native of all the temperate parts of Europe and Asia, and is also found in the upper regions of Africa. The Chinese, who are fond of pork, usually rear, what they call, the Siamese breed, which is smaller than the European sow, and more resembles that of the South-Sea islands. The Romans

held the hog in singular esteem, and the art of rearing it, was discussed under the title of *porculatio.* What is called the *wild hog* in India, *sus babiroussa* (Lin.), a name taken from the Malay word باب روس *babrus*, is common in the woods and jungles, and if killed at certain seasons, when the animal has been feeding on the sugar cane, is certainly of all animal food the most delicate and delicious; it is not fat, rich and heavy like pork, but resembles more venison of the finest quality. It lies light on the most dainty and delicate stomach, and after the fish *whiting* is commonly the first animal food that is allowed to convalescents in India. The species babiroussa, may be distinguished by having the two upper tusks growing from the lower part of the front. The following are some of the names of this animal, given by eastern nations:—*Caatoo poonnie* (Tam.) *Adivi pundie* (Tel.) *Sársel* سرسل (Duk.) *Bobbee ootan* (Mal.) *Bunyla* بنيلا (Hind.) *Kānănă sūkără* कानन शूकर (Sans.)

Hog's lard (adeps suillus), which is obtained chiefly from the flank of the domestic hog, the *Vytians* not only use as we do, in the preparation of ointments and plasters, but when mixed with the dried and powdered root of the shrub called in Tamool *paloopāgulkodi* (momordica dioica) they prescribe it internally in all their three varieties of piles. *Molay moolum* (blind piles), *rutta moolum* (bleeding piles), and *shee-moolum* (piles, attended with a discharge of matter). The Mahometan doctors of course employ nothing that is taken from the hog. Hog's lard is in Tamool *poonnie cólúpoo*, سوركي چربي (Duk.) *pundie kowoo* (Tel.) *sūkarvapā* शूकरवपा (Sans.) *ooromusstoo latail* (Cyng.)

I cannot conclude without observing that it has been remarked by Dr. Kinglake, that of all animal

food, mutton and pork are the easiest digested; and we know that Celsus says, that of the tame animals, the flesh of the hog is the lightest for man. Vide Cels. lib. ii. cap. xviii.

XCVI.

HONEY. *Tayn* தேன் (Tam.) *Sháhid* شهد (Pers.) *Madhu* मधु (Sans.) *Ayermāddoo* (Mal.) *Ussél ulnehl* عسل النحل (Arab.) *Taynie* (Tel.) *Meepanney* (Cyng.) *Miel* (Fr.) *Gemeiner honig* (Ger.) *Mŭdhoo* (Hind.) also انكبين (Arab.) *Mel* (Port.)

MEL.

Honey is much used in pharmacy by the native doctors; it is the produce of wild bees, and is brought from the woods and jungles. Dr. F. Hammilton observed four varieties of honey, in the Coimbatore country, viz. the *Mālen-tênnee*, *Tóduggy-ténnee*, *Cōshu-tennee*, and *Cāmbu-tennee*. From the comb or nest of the bee which produces the first, in general the most honey is obtained; but the last mentioned honey, which is also from a large bee, is of the finest quality. The most common bees, however, are those which produce the *tóduggy-ténnee*, and *cōshu-tennee*, they are small in size, but collect much honey. The same intelligent author, in speaking of the bees of the eastern tracts of the Mysore country, says, here the bees are of four kinds:—1st. the *hénegu*, which yields much wax and honey, it is a large bee; 2d. the *cādi*, a small bee, building a comb of an oblong shape, round the branch of a tree; 3d. the *tuduvay*, the honey of which is good, but not

easily procured; and lastly, the *togriga*, a small bee which seldom stings, and takes possession of ants' nests.

The ancients did not think very highly of honey, as may be seen from various passages of Celsus, "stomacho alienum est mel, &c. &c.;" but when good, we know it to be at once nourishing and laxative; and externally applied, it is supposed to be a useful detergent; in some habits, however, it is found frequently to occasion griping, and when taken in great quantity it has not seldom occasioned violent pains in the abdominal regions, convulsions and even death. The quality of honey, some writers on the subject seem to think, depends on the nature of the plants from which the bees extract it; it certainly differs much in colour in different tracts of country, and also in flavour; there is a darkish green coloured kind in India, which the *Vytians* allege cannot be eaten with impunity, and we know that Dioscorides speaks of honey in the east being dangerous in certain years; nay, Xenophon relates, that when the army of ten thousand approached Trebisond, the soldiers, who had partaken freely of honey found in the neighbourhood, were affected like persons inebriated, several becoming furious, and seeming as if in the agonies of death. Pliny* tell us what plants were considered in his days as the best suited for the bees. The heath honey of Scotland is proverbially excellent. The honey bee in Sanscrit is भ्रमर *brahmara*, and in Malay لبه *lebah*.

The honey of Arabia Felix is said to be of a very superior quality, the doctors of that country place it, medicinally, amongst their مجلبات اوساخ قروح (Deter-

* See his Nat. Hist. tom. i. lib. xi. cap. xv. p. 751.

gentia). Honey, according to Brande*, is a variety of sugar, containing a crystallizable and an uncrystallizable portion, the predominance of one or other of which gives it its peculiar character; it also contains wax and a little acid matter.

We are informed by the distinguished Baron Humboldt, in his Political Essay on the Kingdom of New Spain (vol. iii. p. 21. Eng. trans.) that a great deal of a kind of thin honey, which is very valuable, is got in Mexico, from the *Agave Americana*, and which is there called *maguey de pulque*: it would appear that it is procured by cutting the *corazon* or bundle of central leaves, from the wounds issues the delicious sweet fluid, and continues to be poured out for three months. From the Hortus Jamaicensis, we are further informed (vol. i. p. 236.), that the mocking birds are extremely fond of this honey which they find at the base of the flower: the plant is fully described by Sloane (vol. i. p. 246.), and Browne (p. 199.).

In the Cuddapa district on the Coromandel coast, there is a very singular kind of honey, brought from the woods; in place of being liquid in the comb, it is quite hard and candied, of the form of the cells, and drops out like sugarplums: the natives say its peculiar character is owing to the bees, which are small, feeding on the flowers and sweetish-bitter fruit of a tree, called in Tellingoo *paloo-chittoo*. The honey is light coloured, pleasant tasted, and is supposed to be the best for medicinal purposes.

* See his Manual of Chemistry, vol. iii. p. 27.

XCVII.

HORSE RADISH, substitute for, or MOORUNGHY ROOT. *Moorúnghy vayr* முருங்கை வேர் (Tam.) *Moonaga-vayroo* (Tel.) *Moongay kejhār kejur* منگے کي جهار کي جڑ (Duk.) *Sujna* سجنا (Hind.) *Sigroomūlă* सिग्रुमूल also *Sobhānjănă* शोभांजन (Sans.) *Merikoolumoolu* (Cyng.) *Nuggagedda* (Can.) *Shojena* (Beng.)

HYPERANTHERA MORINGHA (Vahl.)

Cl. and Ord. Decandria Monogynia. Nat. Ord. Lomentaceæ. *Gemeine Behenuss* (Nom. Triv. Willd.)

The moorunghy root has obtained the name of horse radish, from the English in India, from its great resemblance to it in appearance, taste, and natural qualities, and from its being used as such; it is the green root of the hyperanthera moringha, the legume of which is an excellent pot vegetable. The native doctors prescribe the green root, which has a pungent odour, with a warm biting, and somewhat aromatic taste, as a stimulant in paralytic affections, and intermittent fever, in doses of about ʒi; they also employ it in cases of epilepsy and hysteria, and consider it as a valuable rubefacient in palsy and chronic rheumatism. The plant is the بان *bān* of Avicenna (137): it is growing in the botanical garden of Calcutta, and is common all over India.

Dr. Fleeming informs us, that in Bengal an expressed oil is prepared from the seeds, which resists

rancidity, and which is looked upon as an excellent medicine, employed externally, for easing the pain of the joints, in gout and acute rheumatism; the seeds are the *ben nuts*, of old writers on the Materia Medica, and the *hubulbān* حبالبان of the Arabians, who place them amongst their مدرات *Muderrāt* (Stimulantia) the dose 2 direms.

The tree is the morunga of the Hort. Mal. (6. p. 19 t. 11.) and the moringa zeylanica, of Burm. Zeyl. (162. t. 75.) It is the guilandina moringa of Linnæus, and is a middling-sized tree, with rather erect branches; the leaves are irregularly triplicate, pinnate, with an odd leaf; the leaflets, small and oval, standing on slender purplish pedicels, waving beautifully in the wind; the flowers are small, white, tinged with yellow at the base; and grow on the wings of the stalks. In Jamaica the wood is used for dyeing a blue colour, for which purpose I cannot learn that it is employed in India.

The moorunghy tree, or as it is sometimes called in English, the *smooth bonduc* tree, is much prized in many eastern countries, particularly in Java, as well for its excellent edible legume, as its valuable root and seeds. The Malays term the tree *kellor*, which is also Javanese, in Arabic it is طامن *tāmen*, in Persian موریابن *moriaben*; and in Guzarattie *trerida*: the fruit or legume, the Canarese call *nugay* or *nuriga*. Both the leaves and flowers are also eaten by the natives of India, so that in fact there is no part of this plant that is not turned to some good account. We are told by Virey, that some of the French writers have considered the *ben nuts*, which they term *pois queniques*, also *chicot*, are of use in venereal affections. For an account of the character of the

plant in Java, the reader is referred to Dr. Horsfield's List of the Medicinal Plants of that country, in which he will observe, that according to the Thesaurus Leytanirus, the moorunghy root (kellor) has been considered as most useful in dropsy; a virtue which was believed by Sydenham to distinguish the horse-radish of Europe (cochlearia armoracia); a syrup made with an infusion of which, Dr. Cullen found efficacious in removing hoarseness arising from relaxation.

XCVIII.

HYSSOP. *Zufaiy yeabus* زوفاي يابس (Arab.) *Hyssope* (Fr.) *Isop* (Ger.)
HYSSOPUS OFFICINALIS (Lin.)

Cl. and Ord. Didynamia Gymnospermia. Nat. Ord. Verticillatæ.

This article is inserted here merely from my having discovered that it has a place in the Ulfaz Udwiyeh; so is in all probability known in the higher tracts of Hindoostan. It is possible, as the plant is brought to India from Syria, that it may not be the hyssopus officinalis, which Alston seems to have been of opinion was a different plant from the υσωπος of the Greeks, and was not the Esof of the Hebrews. Whatever the زوفاي يابس is, the Arabians class it amongst their قاطعات ديدان *Katat didan* (Anthelmentica), and مدرات *Modurrāt* (Stimulantia). The officinal hyssop of Europe is well known to be considered as tonic, and stimulant; and was at one time a medicine in repute in what are called nervous cases. Pliny appears to have thought this herb useful in

affections of the chest: "Hyssopi quoque quinque rami cum duobus rutæ et ficis tribus decocti thoracem purgant," (Lib. xxvi. cap. vii.); again speaking of it, he says, "pellitque ventris animalia." (Lib. xxvi. cap. viii.) For a long list of other virtues which have been ascribed to hyssop, the reader may consult Cullen, and Phillip's Treatise on Cultivated Vegetables. (Vol. i. p. 269.) The hyssopus officinalis, with another species, the *nepetoides*, were growing in the botanical garden of Calcutta in 1814, introduced, I believe, from North America, by W. Hamilton, Esq.

Celsus considered hyssopus as possessing diuretic qualities, "urinam movet," and also to be useful in coughs, "oportet hyssopum altero quoque die tussis bibere." (Lib. ii. cap. xxxi. & lib. iv. cap. iv.)

XCIX.

INDIGO. *Neelum* నీలం (Tam.) *Nil* (Cyng.) *Neel* نيل (Arab. Pers. and Duk.) *Taroom* (Mal.) *Nīlī* नीली also *Nīlinī* नीलिनी (Sans. and Tel.) *Indigo* (Fr.) *Indigo* (Ger.) *Anil* (Port.) Ινδικον (Dioscor.) *Cham-nho-la* (Coch. Chin.)

INDIGOFERA ANIL (Lin.)

Cl. and Ord. Diadelphia Decandria. Nat. Ord. Papilionaceæ. *Sichelfrüchtiger Indigo* (Nom. Triv. Willd.)

Mr. H. T. Colebrooke, in his valuable Remarks on the Husbandry and Commerce of Bengal, says of indigo: "The manufacture of Indigo appears to have been known and practised in India from the earliest period. From this country (India),

whence the dye obtains its scientific name, Europe was anciently supplied with it, until the produce of America * engrossed the market, especially that of Mexico, Louisiana, and Carolina." But as the plant has been cultivated for ages all over Arabia, and in many parts of Persia, where it is called *neel*, it may become a question whether the Indians may not have borrowed a name for indigo from the more western countries. The Tamools call the plant *averie*, in Sanscrit it is *vishashodanie ;* it is the *ameri* of the Hort. Malab., which, according to Willdenow, is also the Sanscrit name given to the species *tinctoria*, which, that author says, differs from the other : "*foliolis* obovatis, obtusis, utrinque nudis, *leguminibus* teretibus, rectis, etiam sutura gibbosiore, subtorulosa : *racemis* laxis, minutis."

One and twenty species of indigofera are growing in the botanical garden of Calcutta.

The leaf of the plant (ind. anil), is an article of the Tamool Materia Medica, and is supposed to have virtues in *pukka soolay* (Tam.), hepatitis, given in the form of powder, mixed with a little honey; and a decoction of the root is reckoned amongst those medicines which have the power of counteracting poisons, given to the quantity of four or five ounces, twice daily.

Further notice shall be taken of indigo in another part of this work.

Pliny, in speaking of indigo † in his time, says,

* The finest indigo in the world was that of *Guatimala*, a province of Mexico; now the best from Bengal is equal to it.

† Both he and Dioscorides speak distinctly of indigo, and both notice two kinds; Pliny observes, that when pure it gives a beautiful purple colour, and was used for dyeing blue. See Pliny Nat. Hist. lib. xxxv. cap. 6 and 7. p. 688. also Diosc. lib. v. cap. 107. p. 366.

"non pridem apportari et Indicum est cæptum," and we know that he died about 80 years after the coming of Christ.

Indigo was at one period an article of the British Materia Medica; the Romans ascribed to it extraordinary virtues: "rigores et impetus sedat, et siccat ulcera*," but it is no longer prescribed by regular practitioners; and I have been informed that its internal use is even prohibited by law in in some parts of Germany. On the west coast of the Indian Peninsula the *Vytians* supposed it to have good effects when given in decoction in nephritic complaints. We are informed by Mr. Lunan†, that the negroes of the West Indies use a strong infusion of the indigo root in rum for destroying vermin in their heads.

Baron Humboldt tells us that three kinds of indigo are cultivated in the kingdom of New Spain, viz. that from the indigofera anil, ind. tinctoria, and ind. disperma. See his Political Essay on that Kingdom. vol. iii. p. 21. (Eng. trans.)

The reader will find a good analysis of indigo by Chevreul in the Ann. de Chim. lxvi. 20. ‡

C.

IPECACUANHA, substitutes for. See articles, *Euphorbium* in this chapter, *Corinja* (asclepias vomi-

* See Pliny's Natural History, lib. xxxv. cap. vi.

† See his Hortus Jamaicensis, vol. i. p. 426

‡ By his account 100 parts of indigo (of Guatimala) contain 45 parts of pure indigo, which is two less than Bergman found; the other parts are gum, oxide of iron, resin and earth. For an excellent description of the properties of indigo, see a valuable paper by John Dalton, Esq. in the Memoirs of the Literary Society of Manchester.

toria) in the second part of this work, *Marukarungkāi* (gardenia dumetorum) in the same part, and *Sirroo coorinja vayr* (periploca sylvestris) in the same part. Forskahl, in his Materia Medica Kahrina, speaks of seeds which vomit mildly, called حبل هندي مطرش, and which he believes are brought from India; what they are I know not.

In a very curious and interesting work, by Deslongchamps, entitled, "Manuel des Plantes Usuelles Indigenes," into which he introduces an account of such plants as might be substituted for others during the times of war and difficulty, I find, in speaking of those that might be used for Ipecacuanha, he says, "Dans mes expériences, j'ai soumis à une observation exacte, *treize* de ces plantes; savoir, les racines de six euphorbes, celles de quatre narcisses, les feuilles d'asaret, (asarum europæum Lin.) les racines de la dentelaire (plumbago europæa), et celles de la bétoine (betonica officinalis);" the leaves of the asarum europæum appear, by his account, to be the most decidedly emetic of all those he mentions. (See vol. 2.)

In addition to what I have already said, it may be observed, that the roots of various species of cynanchum have been used as emetics in different eastern countries: such as the c. vomitorium of Lamarck; the c. ipecacuanha (Vahl) on the Coromandel coast; the c. mauritianum of Cammerson at the Isle of France; and the c. tomentosum (Vahl) on Ceylon. What is called the white ipecacuanha of Bengal is referred to the c. lævigatum of Vahl. See Oriental Herald for March, 1824.

CI.

IRIS FLORENTINE, ROOT OF. *Ussul-ussosunul assman joonie* جوني الاسمان اصل السوسن also *Irsa* ايرسا (Arab.) *Iris de Florence* (Fr.) *Violen-wurzel* (Ger.)

IRIS FLORENTINA (Lin.)

Cl. and Ord. Triandria Monogynia. Nat. Ord. Ensatæ (Lin.)

This root has merely got a place here from being noticed in the *Ulfaz Udwiyeh*. The plant is a native of Rhodes, Laconia, and other parts of Southern Europe, and is growing with three other species in the botanical garden of Calcutta. European practitioners have recommended the fresh root as a cathartic in dropsies; it has a bitterish nauseous taste, and is peculiarly acrid. French writers on the Materia Medica have given a place to no less than four species of iris, viz. the *germanica*, the *florentina*, the *fœtidissima*, and *pseudo-acorus*. The two first Deslongchamps* believes to possess nearly similar purgative properties; of the species *pseud. ac.* he says, "son suc, introduit dans la bouche ou dans les narines, même en petite quantité, provoque une abondante salivation." Of the last, *fœtid.* he observes, "elles passent pour être utiles dans les scrophules, et dans l'asthma." The Arabian writers consider this root as suppurative, and also rank it amongst their Deobstruents, مفتحات (*Mufettehat*).

* See his "Manuel des Plantes Usuelles Indigenes." Vol. ii. p. 553. &c.

CII.

JALAP, substitute for. See article *Shevadie vayr* in Part II. of this work. For an interesting and scientific account of no less than eight substitutes for the real jalap, which were examined by Deslongchamps, see his "Manuel des Plantes Usuelles Indigenes." (Vol. ii. p. 53.) They are: 1. the root of the convolvulus soldanella; 2. the root and leaves of the momordica elaterium; 3. the root of the bryonia dioica; 4. that of the convolvulus althæoides; 5. those of the thaspia villosa; 6. that of the eupatorium cannabinum; 7. those of the anthericum planifolium; and lastly the petals of the rosa canina. Of all those he says, the best and what comes nearest to the true jalap, is the root of the convolv. soldanella, and which may be rendered a little more powerful by adding about the sixth part of its weight of the euphorbia pithyusa (Lin.). The dose is a little less than that of the root of the convolvulus jalapa.

There are several articles of the Tamool Materia Medica, which might be called substitutes for jalap, but I have especially mentioned the *shévádie vayr* or root of the convolvulus turpethum, as one of the most efficient.

It would appear that Mr. Hume, jun., has lately discovered a vegeto-alkaline principle in jalap, and has called it *jalapine*, it is without taste or smell, is heavier than morphia, quinia, or other substances of that nature, and in the process for preparing it, which is a little intricate, is thrown down in white crystals, ʒi of jalap yields about 5 grains of jalapine.

CIII.

KID. *Aatoo koottie* ஆட்டுக்குட்டி (Tam. *Búckray ke butché ke gosht* بکري کي بچه کا کوشت (Duk.) *Vaynta pilla* (Tel.) *Anakcambing* (Mal.) *Aja putra* अजपुत्र (Sans.) *Chevreau* (Fr.) *Juddee* جدي (Arab.) *Hulwan* (Hind.) *Báz-ghāleh* بزغاله (Pers.)

CARO HŒDINA.

Goat's flesh is improper for the delicate; the same cannot be said of that of the kid, which is on the contrary one of the lightest and safest of all kinds of animal food for the sick; that of India, generally speaking, is excellent, and often preferred, even by those who are in health, to lamb: both kid and lamb I have observed in India to be less dense and heating than mutton, and therefore better suited to weak stomachs. By a Tamool medical work, entitled *Aghastier Vytia Anyouroo*, we learn that the flesh of goats (capra hircus) is useful and proper for the consumptive and asthmatic, also for such as suffer from hypochondriasis, and other enervating complaints; that of the wild goat (capra ibex), and which the Tellingoos call *adivi vaynta pilla*, is considered as peculiarly unwholesome. The kid's flesh in the same work is spoken of as proper for such as have venereal eruptions, and contractions of the limbs from nervous affections. The common goat in Tamool is *aatoo*, the wild mountain variety is common in many Eastern countries; the Arabians term it *erkub* ارقب, and the Persians *buzi koo-hee* بزکوهي I am led to believe

that it differs little from the كمبع (kumbah) of the Malays.

CIV.

KINO. *Toomble hōán* தும்பலஉவாண (Tam.) *Dúmmúlackwayn* دم الاخوين, also *Kāndá-moorgáríttum* (Tam.)

EUCALYPTUS RESINIFERA (Lin.)

Cl. and Ord. Icoscandria Monogynia. *Harz-bringende Schonmutze* (Nom. Triv. Willd.)

I have observed under the head of dragon's blood, that *kino* is but partially known in India, and is generally confounded with the first mentioned article; that kind of it, however, which is obtained from the eucalyptus resinifera, is occasionally to be found in the medicine bazaars, and is brought, I believe, from New Holland, where the tree grows to a prodigious height, and yields the *kino* on incisions being made into the wood of the trunk; it differs very little from that drug which was introduced into practice under the same name by Dr. Fothergill, and which was no doubt obtained from a very lately ascertained tree in Africa, growing near Gambia. Dr. Duncan, junior, in his excellent Edinburgh Dispensatory, mentions a third sort, which is stated to be procured in Jamaica from the coccoloba uvifera or sea-side grape. Mr. A. T. Thomson in his London Dispensatory in speaking of *kino*, says; "although the Edinburgh College has inserted *kino*, as the inspissated juice of the eucalyptus resinifera, and the Dublin College has considered it as the product of the butea frondosa, we believe the best is

got from an African plant, and from the specimen sent home by Mungo Park, that appears to be a pterocarpus, and according to the Encyclopedie Methodique, the species erinacea."

The Botany Bay *kino*, the only kind I have seen in an Indian bazaar*, is without much smell, bitter to the taste, and much more austere than the African drug, resembling rather that obtained from the coccoloba uvifera of Jamaica, but without its acidity.† *Kino*, from whatever plant it has hitherto been obtained, seems to differ but little in its natural or chemical qualities. It has been considered by the practitioners of Europe as powerfully astringent, and employed with success in fluor albus, chronic diarrhœa, and uterine and intestinal hæmorrhages; the dose of the substance from grs. x. to ʒss; the tincture from ʒss. to ʒij. *Kino* is used in the arts: wool or cotton, boiled in a solution of it, and then dipped in a bath of sulphate of iron, assumes a bottle-green colour; but which changes by washing and drying to a very durable blackish brown. By experiments made on *kino* by Dr. Duncan, junior, and also by Vauquelin, it appears to contain a large quantity of tannin, and that this is the ingredient on which its specific properties depend. See Nicholson's Journal (vii. p. 234.), also Ann. de Chimie (xlvi. p. 221.). It does not appear to contain any gallic acid.

Alibert informs us, that in France, "kino a reçu de grandes éloges pour le traitement des flux chro-

* Without the inspissated juice of the nauclea gambir is to be included amongst the kinos.

† Almost every part of this tree is peculiarly astringent. It is a large, crooked, shady tree, which bears clusters of grapes, which are not unpleasant when ripe; the seeds of them reduced to powder is an useful astringent. See Hortus Jamaicensis, vol. i. p. 77.

niques de la membrane muqueuse des intestines et du vagin." See his "Nouveaux Elémens de la Therapeutique." Vol. i. p. 170.

CV.

LABDANUM. *Ladun* لادن (Arab.) *Ciste ladenifere* (Fr.)

CISTUS CRETICUS (Lin.)

Cl. and Ord. Polyandria Monogynia. Nat. Ord. Rotaceæ. *Cretischie cistenrose* (Nom. Triv. Willd.)

This resinous substance, which was considered by some of our old writers as cephalic, pectoral and nervine, is now only used by us in the preparation of certain plasters, which are applied to the epigastric region in cases of flatulency, and spasms in the stomach: and we know that Celsus* was in the habit of preparing with it a plaster which he considered as serviceable in bad ulcers.

The small balsamic and aromatic shrub, from which this substance is procured, grows in Crete and Syria, where, according to Pocock, it is called ladany; the resin is got by drawing lightly a kind of rake with thongs to it over the shrub, so as to take up the unctuous juice, which is afterwards scraped off with a knife; the best is in dark-coloured masses, of the consistence of soft plaster, becoming still softer on being handled.

The shrub seldom rises higher than two feet, with leaves spatulate-ovate, petioled, nerveless, rugged, calyxes lanceolate, the petals are of a rose purple-

* Vide Celsus, lib. v. cap. xxvi.

colour, without smell, and forming a corolla an inch and a half in diameter.

The Arabians use labdanum as a perfume, and in fumigations, and also class it amongst their مقصجات (Suppurantia): it has no place in the French Materia Medica of Alibert; Deslongchamps notices it in his "Manuel des Plantes Usuelles Indigines," and tells us, that it is given internally in France, as a tonic and astringent, in doses of from ʒi to ʒiv. See work, vol. i. p. 46.

Pliny says, that ladanum was in his day found adhering to the beards of the goats in Cyprus, and ascribes to it most singular virtues: "ladanum suffitu corrigit vulvas: doleri earum exhulceratisque imponitur." See his Nat. Hist. lib. xxvi. cap. viii. also lib. xxvi. cap. xv.

CVI.

LAC. *Kómb-urrúk* கொம்பரக்கு (Tam.) *Laak* لاك (Arab.) *Lak'h* (Hind.) *Lākshā* लाक्षा (Sans.) *Lakáda* (Cyng.) *Commolékka* (Tel.) *Gomlac* (Dut.) *Laca empaos* (Port.) *Ambaloo* (Mal.) *Balo* (Jav.) *Kambalo* (Bali.) *Lacque* (Fr.) *Lahi* (Hind.)

LACCA.

This substance, which has improperly been called a gum, is the product of an insect (chermes lacca, Roxb.), which deposits its eggs on various trees; it appears to be designed for defending the eggs from injury, and affording food for the maggot in a more advanced state; it is formed into cells, finished with as much art as a honey-comb, but differently ar-

ranged. Lac is known in Europe under the appellations of *stick-lac*, *seed-lac*, and *shell-lac*. The first is the article in its natural state, incrusting small branches or twigs; the second is the stick-lac separated from the twigs, appearing in a granulated form, having been deprived of its colouring matter by boiling; and the last, or shell-lac, is the substance after having undergone a simple preparation. There is a fourth sort sometimes met with, called *lump-lac*, which is the seed-lac melted and formed into cakes.

Lac is found* in great abundance on the croton lacciferum (the halecus terrestris of Rumphius) growing in Ceylon, and on a tree called *bihar*, which is common at Assam, where it borders on Thibet. In India it is found on the butea frondosa (kœnig), which is called in Tamool *pórásum;* in Tellingoo *módúgá;* in Dukhanie *plāspápára;* in Hind. *pūlās;* and in Sanscrit पलाश *pălāsă*. It is also found on the mimosa cineria (Lin.), which is called in Tamool *vedittálung;* in Tellingoo *véllitooroo;* in Dukhanie *vúrtúlīka;* and in Sanscrit वीरवृक्ष *vīră-vrĭkshă*. It is also not seldom met with on the mimosa glauca (kœnig) and on the shorea jala, Bucch. MSS. Dr. F. Hamilton, MSS. informs us in his admirable account of the Puraniya country, that he there found the jujub tree (*bayr.* Hind.), much cultivated to rear the lac insect on; it is the zizyphus jujuba (Lin.).†

* A good account of the lac insect, may be found in the Asiat. Journal for March 1817. It is found on the pepul tree (Beng.), which is the ficus religiosa, on the bur tree (Beng.), which is the ficus bengalensis, and on the *pras*, which is the butea frondosa.

† In the Rungpore district, Dr. F. Hamilton (late Buchanan) found the lac insect on the *pakur* (ficus religiosa), *Dhop* (varinga latifolia), *Mejkuri* (morus Macassariensis), and on the *mendu kolai* (cilisus cajan). MSS.

Lac is an article of commerce from Siam *, from Laos, from Assam, from Pegu †, from Tonquin, and from the *Ayer Rajah* coast of Sumatra; it is sometimes, Abbe Rochan informs us, brought from *Quam-au-ton*, in the province of *Quei-chu*, in China, "but of a quality inferior to that of Bengal." Crawford, in his "History of the Indian Archipelago," observes, that the lac insect exists in most of the forests of the Indian Islands, but especially in those of Sumatra, and the Malaya Peninsula. (See his work, vol. iii. p. 437.)

Mr. W. Franklin, in his "Tracts Political, Geographical, and Commercial on the Dominions of Ava" (p. 71.), tells us that *charon* is the name given in the Burmah dominions to a kind of black-lac, which is extracted from a large tree, one or two plants of which were brought to Calcutta by Captain Cox; he adds, that this lac was in general use amongst the natives for their lacquered ware. A coarse kind of lac is called in Tamool *awel urruk*. The Tamool doctors prescribe lac in old and obstinate bowel complaints, when the habit has been much reduced: they also, mixed with gingelie oil, use it as an external application for the head, in cases in which the patient is debilitated from long-continued fever. Of all the lacs, shell-lac, according to Hatchett, appears to contain the greatest quantity of resin ‡, and stick-lac of colouring matter and wax. Dr. Pearson, Mr. Brande ‖ informs us, obtained a peculiar acid from a substance called white-lac, brought from Ma-

* See Turpin's Histoire de Siam.

† The stick-lac of Pegu is reckoned the finest in the world. See Oriental Repository, vol. ii. p. 580., also Tavernier's Indian Travels, part. i. book. ii.

‡ See Philosophical Transactions for 1804.

‖ See Brande's Manual of Chemistry, vol. iii. p. 65.

dras, which he termed *laccic acid;* and Dr. John has announced the presence of a peculiar acid in *stick-lac,* which he has also called *laccic acid.*

For the use of lac in the arts, the reader is referred to another part of this work. The tincture of lac is a favourite medicine amongst the Arabians in preparing cleansing washes; they call it *mehawer* مهاور. I shall conclude this article by recommending my readers to peruse an excellent account of the lac insect by Dr. Roxburgh, in the lxxxi vol. of the Philosophical Transactions.

For another interesting account of lac in its various forms, the reader may consult a little work, entitled, "Analytical Experiments on Lac," by Charles Hatchett, Esq.

Since writing the above, I have learnt from the interesting manuscripts of the excellent Dr. F. Hamilton, that a decoction of the stick-lac in mustard-seed oil, to which has been added a little of the pounded root of the morinda citrifolia, is used in Behar as an unguent for anointing the body in cases of general debility.

CVII.

LEECH. *Attéi* அட்டை (Tam.) *Zálágāh* (Tel.) *Patchet* (Mal.) *Jonk* جونک (Duk.) *Jălŭkā* जलुका (Sans.) *Koodalla* (Cyng.) *Kheraheen* خراهين (Arab.) *Zeloo* زلو (Pers.) *Sangsue* (Fr.) *Blutigel* (Ger.)

HIRUDO MEDICINALIS.

The native practitioners use leeches for the same purposes that we do, particularly the Mahometans.

The species *medicinalis* is in general larger than the European leech, and very voracious. The horse-leech (hirudo sanguisuga) is also common in the stagnant pools of lower India, it is larger than the species above mentioned, with a depressed body and dusky-coloured back, and belly of a yellowish green. What is called the Ceylon leech, but which is also to be met with in the Southern tracts of the Peninsula, is a most dangerous animal to foot travellers at certain seasons; this little creature is seldom more than an inch long, and some of them are infinitely smaller, it is broad behind, and taper towards the fore-part; its colour brown, or light-brown; its substance nearly transparent; it is very active, and is said now and then to spring from the ground; its powers of contraction and expansion are wonderful; its point is so sharp, that it makes its way through the smallest openings, and attacks the feet, legs and thighs in the most unmerciful manner. Dr. Davy, in his Account of the Interior of Ceylon *, describes the reptile fully, and speaks with horror of the swoln and bloody limbs occasioned by it; what appears to increase the mischief is that great numbers generally attack at one time. It would seem by Marsden's very excellent work on Sumatra, that it is the same, or nearly so, as the mountain-leech of that island.

The Hindoo doctors, but more especially the Mahometan practitioners, are very particular about washing well the part to be leeched with a little soap and water, and then with pure water. In a hot climate it is sometimes difficult to stop the bleeding from leeches, as well as from phlebotomy. It is

* See Dr. Davy's Account of the Interior of Ceylon, pp. 102, 103.

soonest done by gentle pressure, and by applying to the parts water that has been made very cold by means of a solution of salt-petre. For the sores which sometimes follow the leech bites, the best application is castor-oil.

CVIII.

LIME. *Elimitchum pullum* எலுமிச்சம்பழம் (Tam.) *Jérook* جروک (Mal.) *Neemboo* نیمبو (Duk.) *Némmapúndoo* (Tel.) *Dehi* (Cyng.) *Jămbhhīra* जम्बीर (Sans.) *Neemboo* (Hind.) *Korna neboo* (Beng.) *Citronier* (Fr.) *Citrone* (Ger.) *Usi* (Celebes.) *Cay-Tanh-yen* (Coch. Chin.)

CITRUS MEDICA.

(Var. δ. c. acris.) CITRUS ACIDA (Roxb.)

Cl. and Ord. Polyadelphia Icosandria. Nat. Ord. Pimaceæ. *Gemeine citron* (Nom. Triv. Willd.).

The lime tree thrives well all over India, being much more common than the lemon, which is the citrus medica, var. β. c. limon. The lime differs considerably in appearance from the lemon, being smaller, quite round, or nearly so, with a smooth rind; it is, besides, still more acid than the lemon, and to a certain degree acrid; they are, in their natural qualities, otherwise the same. Lime-juice is much used in medicine by the native practitioners: they consider it to have virtues in checking bilious vomiting; and believe, as we do, that it is powerfully refrigerent, and antisceptic. In the Tamool Medical Sastrum, entitled *Aghastier Vytia Anyouroo*, there is quite an eulogy on the lime: "It is a fit and

proper thing to be presented by an inferior to a superior; it is beautiful to behold; cooling and fragrant to the smell; the juice of it rubbed upon the head, will sooth the ravings of phrenzy; and the rind of it dried in the sun, has the power when laid under the pillow of conciliating affection." !!!

The European inhabitants, in hot weather, find a sherbet made with limes extremely grateful, but care must be taken that the fruit is altogether ripe; for, if made with unripe fruit, and taken in considerable quantity, it is very apt to produce cholera morbus; which is best combated in such cases with calcined magnesia. The sherbet made with oranges is a much safer beverage. Dr. Thomson, in his London Dispensatory, tells us, that lime-juice, taken to the quantity of half an ounce, allays hysterical palpitations of the heart. An effervescing draught, made with about ʒss. of the lime-juice and ϑi. of carbonate of potass, is given with success to stop vomiting, and determine to the surface; but Dr. T. says, a more pleasant draught is made by putting ʒss. of lemon-juice, mixed with a small quantity of sugar, into a tumbler, and pouring over it a pint of aërated soda water. (See Article Orange, in this part of the work.)

CIX.

LIME, QUICK. *Chúnāmboo* சுண்ணாம்பு (Tam.) *Hoonnoo* (Cyng.) *Chūnna* چونا (Hind. and Duk.) *Capoor* (Mal.) *Soonnum* (Tel.) *Chūrna* चूर्ण (Sans.) *Nooreh* نورہ (Pers.) *Ahúk* اهک (Arab.) *Chaux* (Fr.) *Kalkerde* (Ger.)

CALX (Lond.)

The natives of India are in the habit of making quick-lime from its various carbonates, nearly in the same way that we do. That prepared from the common lime-stone by burning, the Tamools call *kull chúnāmboo;* that got from burning sea-shells, they call *kullingie chunamboo.* At Bombay, for common purposes, they make their quick-lime from a coarse kind of coral, found on the numerous reefs which stretch off from the island. Lime-water, *chunamboo tannie* (Tam.), the Vytians prepare also as we do; adding to about half a pound of the quick-lime twelve or thirteen pints of boiling soft water; they prescribe it mixed with a little gingelie oil (oil of sesamum seeds), and sugar, in obstinate cases of gonorrhœa. European practitioners find it a useful anthelmintic, and also employ it externally as a detergent. The dose is from ʒij. to half a pint, alone, or diluted with milk. Some late writers have extolled the virtues of lime-water in diarrhœa, diabetes, and leucorrhœa. More will be said of quick-lime in another part of this work. Dr. Paris, in his Pharmacologia, informs us, that lime-water dissolves the mucus with which disordered bowels are often infested; milk, he adds, disguises its nauseous flavour, without impairing its virtues. (See work, pp. 429, 430.)

CX.

LINSEED. *Allévérei* அளிவிரை (Tam.) also *Serroo Sanulverei* (Tam.) *Ulsikébinge* السي كي بينج (Duk.) *Buxruk* بزرک (Arab.) *Tókhémkutān* تخم كتان (Pers.) *Alivitúloo* (Tel.) *Bidgierāmmee*

(Mal.) *Umā* उमा (Sans.) *Tisi* (Hind.) *Lynzaad* (Dut.) *Linhaca* (Port.) *Grains de Lin* (Fr.) *Leinsaamen* (Ger.) also *Atasi* (Sans.) سوف (Hind.) *Pahaha* پهاها (Hindooie.)

LINUM USITATISSIMUM (Lin.)

Cl. and Ord. Pentandria Pentagynia. Nat. Ord. Gruinales. (Lin.) *Gemeiner Flachs* (Nom. Triv. Willd.)

There is a great deal of flax now cultivated in many parts of Upper India, and especially in Bengal*, for making oil, and of late years it has also become an object in the lower provinces; the plant is termed in Bengalese, *musina*.

Linseed does not appear to be much used by the Hindoos in medicine. European practitioners have long considered it as a valuable emollient and demulcent, in diarrhœa, catarrh, pneumonia, dysentery, gonorrhœa, visceral obstructions, calculus, &c.; an infusion of it, in the proportion of ℥j. of the seed to a pint of water, is a convenient mode of prescribing it; a decoction of the seed forms an excellent enema, in abrasions of the intestines; and ground into powder, and simply mixed with boiling water, it makes a useful poultice.

Formerly, Mr. Phillips tells us, the seed of the flax was occasionally used with corn, to make bread, but was considered as hurtful to the stomach. Our article, with another species, the *trigynium*, which is the *goolashroopie* (Hind.), are growing in the botanical garden of Calcutta. The species, *catharticum*, was in the Company's garden at Madras, in 1809, but

* See Mr. W. Carey's Account of Flax in vol. x. Asiatic Researches, p. 15.

it seemed a delicate plant, and I think afterwards died; it is well known, that as a purge the lin. catharticum was celebrated by Gerarde, and Linnæus appears to regret that it has fallen into disuse; it is still in repute amongst the practitioners on the continent; and Deslongchamps says, it may be well used as a substitute for senna; he recommends the vinous infusion, in preference to the aqueous. The dose ʒij. of the dried leaves in infusion. Since writing the above, I have learnt that the cultivation of common flax, at Madras, has particularly called the attention of M. Nazier Shamier, who now employs the oil prepared from seed of his own rearing, in the arts.

More will be said of flax in another part of this work.

CXI.

LIQUOR, SPIRITUOUS. *Chārāyum* சாராயம் (Tam.) *Arruk* عرق (Arab.) *Arruk* (Duk.) *Khulloo* (Tel.) *Arrak appee* (Mal.) *Madirā* मदिरा (Sans.)

ARRACUM SPIRITUS TENUIOR (Lond.)

Arrack is used by the Tamool practitioners as an external application in cases of burns, sprains, palsy, chronic rheumatism, &c.; they also occasionally prescribe it internally, when diluted, as a stimulant.

The natives of India are proverbially sober, especially the Hindoos; with regard to the Mahometans, it is true that it is against the tenets of the Koran, to take any thing that had undergone the vinous fermentation; but such commands are but too often

evaded. The Brahmins are more rigid observers of what their religion inculcates; and will only take wine or spirits when ordered as a medicine, and that with difficulty, and many will not take it on any consideration.

The finer kind of arrack, which is met with in India, and which is the only sort employed by the higher orders of Europeans for making punch, &c., is either brought from Batavia, where it is called *kneip*, or from Columbo; that first mentioned is the most prized, and formerly was a source of great revenue to the Dutch. Rice, jaggary, and cocoa-nut toddy, are the principal ingredients employed in the preparation of it.

What is called in India *pariah arrack*, and which is made in but too great abundance in every part of the country, is of a very inferior quality, and is often rendered unwholesome by an admixture of *ganja* or *subja* (See these articles in Part II. of this work), which have the effect of making it more inebriating.* There are several kinds of this last mentioned spirituous liquor (pariah arrack), differing in strength and purity of composition. One of the best, or perhaps I ought to say, least hurtful is distilled from cocoa-nut toddy, and is named in Tamool *khulloo charāyum*, and in Canarese *gungàsir*. Another sort is obtained from distilling a mixture of jaggary water and the barks of various trees, and has in consequence got the name of *puttay charāyum*. Many barks are so used, the chief are the *vulvaylum puttay* (mimosa ferruginia), and the *Malay eetchum puttay* (Phœnix Spec.), also the bark of the *karoovelum tree* (acacia Arabica, Willd.)

* For the same purpose the juice of the thorn-apple is also used.

We learn from Burchell's Travels in Southern Africa, that much of an inferior kind of arrack is there distilled from the berries of a plant which the Dutch call *brande-wyn bosch* (grewia flava), but which I believe to be the grewia orientalis of Vahl.

Within these last few years, arrack has been made at Madras of so good a quality, as to be considered little, if at all, inferior to the Batavia article.

The virtues of spirituous liquors in a medical point of view, as allowed by the European practitioners, are too well known to require particular notice here, Dr. Thomson says, *brandy* is simply cordial and stomachic; *rum*, heating and sudorific; *gin* and *whisky* diuretic, and *arrack* styptic, heating and narcotic. I add, the least injurious of all these to the constitution is well-made *whisky*, which rarely gives a headach when taken in moderation.

CXII.

LIQUORICE ROOT. *Addimōdrum* அதிம தூரம (Tam.) *Jétimadh* (Hind.) *Mădhŭkă* मधुक also *Yăstimădhŭka* यष्टिमाधुक (Sans.) *Mittie luckerie* مهتي لكڑي (Duk.) *Ussulsoos* اصل السّوس (Arab.) *Bikh-mekeh* بيخ مهک (Pers.) *Wellmie* (Cyng.) *Pao doci* (Port.) also عرق سوس (Arab.) *Reglisse* (Fr.) *Sussholzwurzel* (Ger.) *Urat manis* (Mal.) *Oyot manis* (Jav.) also *Olinde* (Cyng.)

GLYCYRRHIZA GLABRA (Lin.)

Cl. and Ord. Diadelphia Decandria. Nat. Ord. Papilionaceæ. *Gemeiner Sussholz* (Nom. Triv. Willd.).

It would seem, by Dr. Fleming's Catalogue of In-

dian Plants, that liquorice grows in the Bengal provinces, and we know that it is a product of the Malabar coast, where it is called *irattimadhiram;* but I am much inclined to think that a great deal of the liquorice root which is met with in the bazars of Lower India is imported from Persia, where it grows in abundance, particularly near Bussora* in the date groves, and on the banks of the *Sewund*† river. This sweet, pleasant, demulcent root, is in high repute amongst the Hindoo practitioners, who prescribe it in various forms, but chiefly in infusion for coughs, consumptions, gonorrhœa, &c.; they also consider it as a mild laxative. The root of the wild Jamaica liquorice (abrus precatorius, Lin.) so much resembles the true liquorice root in appearance and natural qualities that it is often sold for it in India, and used as such. (See article *Coondumunnie vayr*, in Part. II. of this work.) By Pliny's account it would appear, that the liquorice root was known as a medicine in his time; "Præstantissima in Cilicia, secunda Ponto, radice dulci, et hac tantum in usu," it seems to have been prescribed for the same ailments then that it now is. See Pliny's Nat. Hist. lib. xxii. cap. ix. p. 760.

CXIII.

MACE. *Jādipútrie* ஜாதிபுத்ரி (Tam.) *Jáwátrie* جوتري (Hind. and Duk.) *Jápātri* (Tel.) (Tel.) *Bunga-bua-pala* (Mal.) *Kambang-pala* (Javan.)

* See Capt. Macdonald Kinneir's Geographical Memoir of Persia, p. 291.

† Where it is called *sus* and *khorshuter*, or camel thorn. See Morrier's Second Journey to Persia, p. 115.

Bunga-pala (Bali.) *Jātipătrī* जातिपत्री (Sans.) *Wassawasie* (Cyng.) *Bezbaz* بزباز (Pers.) *Foely* (Dut.) *Flor de nozmoscada* (Port.) *Moshat blumen* (Ger.) *Macis* (Fr.) *Talzúffúr* طالسفر (Arab.)

MYRISTICA MOSCHATA (Wood.)

Cl. and Ord. Dicœcia Monadelphia. Nat. Ord. Lauri (Juss.)

Mace is the oily, membranous, fleshy, pale-yellow coloured pulp (arillus), which is extended over the thin, brittle shell that incloses the nutmeg, which is itself contained within the external covering of the fruit of the myristica moschata; and is first disclosed on the fruit ripening and bursting.

Mace, which is chiefly used for culinary purposes in Europe, has the spicy, aromatic odour of the nutmeg, but is more pungent and bitter; it is brought to India from Batavia and the Banda islands, in thin, flexible pieces, which have an unctuous feel. The Dutch*, before the late disastrous revolutions in Europe, were in the habit of exporting annually from Banda upwards of one hundred thousand pound weight of it. It is a favourite medicine of the Hindoo doctors, who prescribe it in the low stages of fever, in consumptive complaints, and humoral asthma; and also, when mixed with aromatics, in wasting and long continued bowel complaints, in doses off rom grs. viii. to grs. xii., and sometimes to as much as ʒss.; but they generally administer it cautiously, from having ascertained that an overdose is apt to produce a dangerous stupor and intoxication; the same effect is ascribed to the nutmeg

* See Stavorinus's Voyages to the East Indies, vol. i. p. 335.

by Bontius.* The Arabians place mace amongst their *Mobehyat* مبهيات (Aphrodisiaca) and *Mofeshyat* مفشيات (Carminativa).

We learn by Avicenna (183), as well as Serapio (c. 2.), that the Arabs gave to mace the name of طالسفر. Our article (myristica moschata) is called in Bengalese *jayaphula*, and is growing with two other species in the botanical garden of Calcutta.

In Mr. Crawford's admirable account of the Indian Archipelago†, we learn, that the dried produce of a nutmeg, consists of nutmeg, mace, and shell; in fifteen parts of the whole produce, there are two of mace, five of shell, and eight of nutmeg. The nutmeg requires a long and careful preparation to make it fit for commerce; but the mace requires no such trouble, simple exsiccation in the sun rendering it at once fit for the market. The tree rises to upwards of thirty feet, with many erect branches, leaves elliptical, pointed and undulated, and small inodorous flowers, which are present at the same time with the fruit, and are supported on axillary peduncles.

CXIV.

MADDER of BENGAL. *Manjtittie* மஞ்சிட்டி (Tam.) *Mandestie* (Tel.) *Pooutvayr* (Malayalie) *Well madatta* (Cyng.) *Runas* روناس (Pers.) *Fuh* فوه (Arab.) *Menjithé* منجيهته (Hind.) *Garance* (Fr.) *Krappwurzel* (Ger.) *Grança* (Port.) *Măn-jishthā* मञ्जिष्ठ (Sans.)

RUBIA MANJISTA (Roxb.)

* See Bontius's Account of the Diseases, &c. of the East Indies, p. 194. Eng. Trans.

† See his work, vol. iii. p. 395.

Cl. and Ord. Tetandria Monogynia. Nat. Ord. Stellatæ.

This species of madder is indigenous in Nepaul*, and Lower Thibet; and I perceive by the Flora Indica†, grows in the botanical garden of Calcutta, but requires uncommon care to keep it alive, during the rainy season; and it has never blossomed there. It would appear to be chiefly produced in *Kuchar*, and the root of it is in great demand in the adjacent countries, for dyeing their coarse cloths and stuffs red; the Nepaulese are in the habit of bartering it for rock salt and borax. I am inclined to think that it is this species which grows plentifully in some of the provinces of Persia, especially in the *Mekran*‡; and we learn from Tavernier§, that formerly madder was much cultivated in Persia, in the country near the river *Aras*, and was used for the same purposes in the arts, that the rubia tinctorum is in Europe at this day.

The fibres of the Bengal madder root are neither so thick nor succulent as those of the rubia tinctorum; when exported to England, Mr. Colebrooke‖ informs us, that it has brought only about half the price of the Smyrna and Dutch madder roots.

Dr. Fleming, in his Catalogue of Indian Medicinal Plants (p. 35.), says, that he is not aware that the root of the rubia manjista has ever been tried as a medicine in Bengal, but that the sensible qualities being the same as those of the root of the r. tinctorum, he sees no reason why it should not. The

* See Col. Kirkpatrick's Account of Nepaul, p. 182.
† See Flora Indica, p. 383.
‡ See Macdonald Kinneir's Geog. Memoir of Persia, p. 225.
§ See his Travels in Persia, book i. chap. iv.
‖ See Remarks on the Husbandry and Commerce of Bengal, pp. 198, 199.

hakeems of Lower India are in the habit of prescribing an infusion of the root. (See article Manjittie Vayr, in Part II. of this work.)

The madder of Europe, which has a strong and unpleasant odour, and a bitterish and rather austere taste, used formerly to be considered as a valuable emmenagogue, and was often ordered in chlorosis and difficult menstruation; it was also, Dr. Thomson tells us in his London Dispensatory, recommended in jaundice, and in the atrophy of infants; but it is now but little thought of: its dose is from grs. x. to xx., given twice daily, in combination with sulphat of potass; its colouring matter is taken into the circulation, and tinges the urine red, and is deposited in the bones. The French* writers on the Materia Medica, at one time spoke in high terms of its virtues in obstructions of the liver, dropsy, and fluor albus; but they too seem of late to consider it as of little real utility.

The rubia manjista the reader will find well described by Dr. Fleming, in the Asiatic Researches (xi. 177.), also by Dr. Roxburgh, in his Flora Indica (p. 383.): it is a perennial, scandent plant, with *leaves* four-fold, long-petioled, cordate, acute, from five to seven nerved, hispid; *corol.* flat, five-parted, pentandrous; by which last character it is distinguished from the r. cordifolia. Dr. Francis Hamilton†, in his Account of Nepaul, speaks of two kinds of rubia he found there, the rubia cordata of Willd. (by which he meant, it may be presumed, the *r. cordifolia*) (Willd. Spec. Plant. vol. i. p. 605.), and

* See Deslongchamps' Manuel des Plantes Usuelles, vol. i. p. 352.

† See his work, p. 74.

another species, which has not yet been described by botanists.*

CXV.

MALLOW-LEAF, substitute for. *Toottieelley* தூதிலை (Tam.) also *Nellie toottie* (Tam.) *Toottie akoo* (Tel.) *Coongoonie* (Hind.) *Kungkuikapāt* كانكوي كاپات (Duk.) *Khébazie* خبازي (Arab.) *Khitmie* خطمي (Hindooie.)

SIDA MAURITIANA (Lin.)

Cl. and Ord. Monadelphia Polyandria. Nat. Ord. Columniferæ.

There are several species of sida in India; the leaves of the greater number of which are employed for the same purposes that those of the marsh mallow (althæa officinalis), and common mallow (malva sylvestris) are in Europe, being soft, nearly inodorous, mucilaginous, and demulcent. Those most commonly used are the leaves of the sida mauritiana (our present article), of which Willdenow says: "foliis subrotundo, cordatis accuminatis dentatis subtus tomentosis:" besides preparing emollient fomentations with them, the Hindoo doctors prescribe the expressed juice, internally, in gonorrhœa, and give an infusion of the root as a drink in fevers.

The sida mauritiana is a common plant, growing by the road sides in many parts of Southern India;

* There appears to be little doubt but that our madder is what the Greeks called Ερευθο δακον, and which Pliny says the Romans termed rubia, and dyed leather red with it. Lib. xxiv. p. 341. In the middle ages, Beckmann tells us, it was named varantia. (Hist. of Inventions, vol. iii. p. 258.)

it is an annual, having very long peduncles, with orange-coloured flowers, and has got its specific name from having been first particularly noticed at the Mauritius. Some of the other species of sida, employed in Asiatic countries for similar purposes, are the sida populifolia*, which is the *beloere* of the Hortus Malabaricus (6. 77. t. 45.); the sida cordifolia (a native of Cochin-China), the Sanscrit name of which is *bátyálāca*, and the Hindoostanie *bariāla;* the sida rhombifolia, which is the *lal bariala* of the Hindoos of Upper India; and the sida Asiatica, which is a most beautiful plant, and is called in Tamool *perin toottie*, from the largeness of its leaves, and its small lovely flower, which is stained inside with a deep purple. Nineteen species of sida are growing in the botanical garden of Calcutta.

The Arabians have two names for mallows: *khabbāzee* خبازي, and *ánjīl* انجل. The Persians call the seed *towdrie* تودري, it is considered by them as deobstruent and detergent; the mallow plant itself they term khitmee خطمي.

The Romans considered mallows as possessing many virtues; and that the juice of the plant drank every day, for a short time, was a preventive against all evils. See Pliny's Nat. Hist. lib. xx. cap. xxi.

CXVI.

MANDRAKE PLANT. *Ustrung* استرنگ (Arab.)

* This is common in Ceylon, where it has got the Cyngalese name of *maha-anoda*. Eleven other species of sida are growing in the royal botanical gardens in Ceylon. See Mr. Moon's valuable Catalogue of Ceylon Plants, p. 50.

Merdum giah مردم گیا (Pers.) *Yeb-rooj* (Beng.) *Luckmuna luckmunee* (Hindooie.) *Cāāt-jootie* (Tam.) ATROPA MANDRAGORA (Lin.)

Cl. and Ord. Pentandria Monogynia. Nat. Ord. Luridæ. *Alraun Tollkraut* (Nom. Triv. Willd.).

The fetid root of the mandrake plant has various names, arising from its supposed resemblance to the human form: *Mandragen* (Ger.) It was formerly an article in the British Materia Medica, but is now exploded, though the leaves are still sometimes employed in preparing anodyne fomentations, and discussing indolent tumours. The modern Arabians and Persians place this root amongst their narcotics, and suppose it to be antispasmodic; the former call it اصل اللفاح, and the latter بیخ مردم گیا. Avicenna (Canon. Med. lib. xiv.) speaks of the fruit of it under the name of لوفحا *loofa*, the root he calls *jebroch.* (178.) Deslongchamps informs us, that formerly in France the root was employed as a charm by magicians. See his "Manuel des Plantes Usuelles," (vol. i. p. 397.)*

The fruit of the plant the ancients were in the habit of putting under their pillows, from its supposed soporific virtues (Cels. lib. iii. cap. xviii.), and Boerhaave mentions, that even the smell of the plant induces drowsiness; the root has been externally used for dispersing the swellings of the lymphatic glands; and internally has been given to the

* Dioscorides speaks of it under the name of Μανδραγορας, but Dierbach in his Mat. Med. of Hippocrates, chap. viii. seems to think that the virtues of the plant, as mentioned by Hippocrates, rather resemble those of the atropa belladona; the roots, he adds, was recommended in melancholia suicida, also in agues and other diseases.

extent of ℈i. twice or thrice in the twenty-four hours, in gout. The leaves boiled with milk, Boerhaave recommended in scrophulous affections. The plant is a native of Spain, Italy, and Crete. The root is in shape not unlike a parsnip, and runs three or four feet under ground; immediately from the crown of it arises a circle of leaves, at first they stand erect, but when grown to their full size (which is commonly about a foot in length, and five or more broad in the middle) they spread open and lie on the ground. Of the five species of atropa hitherto noticed, but one grows in the botanical garden of Calcutta, the *physaloides*, introduced by F. Horsley, Esq., in 1796.

In speaking of the anodyne and soporific qualities of the mandragore root, Hoffman observes: "In proverbium adeo transierat apud veteres, de languido, suisque in negotiis torpido, dicere; mandragoram illum ingessisse." (Vide C. Hoff. Offic. p. 415.)

The mandrake plant is spoken of by Pliny, under the name of circeium; he notices two kinds, a white and a black*: he is of opinion, that used cautiously, it may be taken to procure sleep; but that an overdose will destroy. Nat. Hist. book xxv. chap. xiii.

CXVII.

MANNA. *Shīrkisht* شیرخشت (Pers. and Hind.) *Terinjebīn* ترنجبین (Arab.) *Manna* (Dut.) *Manna*

* Modern botanists, however, allow these to be only varieties. See Roque's Phytographie Medicale, vol. i. p. 244.

(Port.) *Kapur-rimba* (Mal.) *Gambing* (Jav.) also *Mun* (Arab.)

MANNA PERSICA
(Fothergill Phil. Trans. xliii. 47.)

Dr. Fleming says, that the manna sold in the Indian bazars is imported from Bussora; and is the same with that described by Dr. Fothergill, in the paper to which I have just referred. The plant which yields it is supposed to be the *hedysarum' alhagi;* and we know that it is from that that the manna of Mesopotamia*, and especially about Tauris is procured; it would appear by the Hortus Bengalensis to be a native of Hindoostan as well as the Levant, and is growing in the botanical garden of Calcutta, under the name of *juwasa.* The manna obtained from it is very inferior to that of Calabria, which is the produce of the *fraxinus ornus,* or flowering ash, and which according to Dierbach † is the ελεα of Hippocrates. There are three other species of ash which yield this medicine; the *rotundifolia,* the *excelsior,* and *parviflora;* and Mr. Gray seems to think, that it is from the first of these that most of the manna found in the market is got; it either exudes in dry weather spontaneously from the stem and branches; or it is obtained by making longitudinal incisions on the side of the tree, which is of the class and order Diandria Monogynia and natural order Sepiariæ: it is rather a low growing tree, with leaves smaller than those of our common ash, and flowers with petals (Miller).

I perceive by D'Herbelot's account, that manna

* See Russel's Account of Aleppo.

† See his Materia Medica of Hippocrates, chap. iv.

can be procured from a variety of trees in Persia, particularly in Khorasan, and near the city of *Rei Sheeriar;* much is also yielded by a thorny plant called *khār-shooter*, to be met with in abundance near the city of *Zamin* on the confines of the province of Samarcand, and which is on that account termed by the Arabs *terinjebine alzamini.* A factitious manna, a compound of sugar or honey, with scammony, is sometimes exposed for sale, but is easily detected. It is really curious to see the different opinions which have been offered to the world respecting manna; in addition to what D'Herbelot mentions, as above stated, I shall observe that in the *Ulfaz Udwieyh* ترنجبین also, is given as the name of a substance collected at Khorasan, from the plant called *khār-shooter;* the same authority mentions, that it is a mild purgative *resembling* manna, and brought from *Nishapoor.* In this work too شیرخشت is given as the name of a sort of manna called from a barren tree, named *derukt bey chowb;* من *mén* we are further told, in this publication, is the general name for all kinds of honey dew in Arabia, and that بید خشت *beed khusht* is the Persian, also بید انکبین, of a variety of manna found on a willow of Khorasan; this in Persian is termed شیرخشک. Whether any of these mannas may be the product of the insect, which has got the appellation of *chermes mannifera*, I know not; but the inquiry might be interesting. Major Macdonald Kinneir, mentions, in his Geographical Memoir of Persia (p. 339.), a sort of manna which the Persians call *guz**, and which may be procured in great quantities in *Louristan*,

* And which can be no other than the *guzangābeen* گزانگبین mentioned in the Ulfaz Udwiyh as collected from the tamarisk tree.

and in the district of *Khonsar* in *Irak*; he adds, that it is obtained from a shrub in appearance like a funnel, about four feet high, and is supposed to be produced by small red insects; these are seen in vast numbers under the leaves. Now this I should presume is the substance which, within the last few years, has called the attention of several scientific men of the Indian establishments; such as General Hardwick, Captain Edward Frederick, and particularly the admirable Dr. Wallich; the last mentioned gentleman had only seen the insect which produces it in its larva state; though we know that the French entomologist Geoffroy had many years ago attributed to a species of chermes, the property of producing both in the *larva* and *pupa* state, a sugary substance of a white colour: it appears that the animal is about the size of a domestic bug, and of a flattened oval form. Mr. Hunter informs us, that the *guz* seems to project from the abdomen of the animal in appearance like a tail, or bunch of feathers; but perhaps more resembling snow than any thing else. The animals are found on certain trees in Persia and Armenia; swarming in millions and generating this feathery-like substance, till it gets long and drops on the leaves, caking on them, and resembling beautiful bees-wax: the insects do not destroy the leaves they feed on.

The Hindoos know, and care little about manna; the Mahometans of India prescribe it as a laxative to children and delicate women, in doses from ʒij. to ʒiss., and the Arabians give it a place amongst their *Mushilát-sufra* مسهلات صفرء (Cholagoga). For further particulars respecting manna in eastern countries, the reader is referred to the writings of Mesue, Hali Abbas, Alsaravius, and other more modern

authors. The fraxinus ornus was called by Avicenna * lasān al asāfeer لسان العصافير. To the hedysarum alhagi, the tree from which the Terinjebine manna is obtained, the same writer gave the name of الحاج, and still another sort it would appear is got from a plant called الغول. † For an account of the Briançon manna, which exudes from the larch or *sapin meleze* of the French (pinus larix), the reader is referred to Deslongchamps' "Manuel des Plantes Usuelles" (vol. ii. p. 521.): it is found in small concrete drops, which taste like honey dew: it is gently laxative, but is only used by the common people in the districts where the tree grows, which the author just mentioned says are chiefly alpine. Alibert in his "Elémens de Thérapeutique (vol. i. p. 315.), in speaking of the different places where this medicine may be obtained, says: "on récherche aussi beaucoup celle de la pouille, près du mont Saint-Ange, malgré, sa couleur jaune, et son extrême humidité; celle de Sicile, plus sêche et plus blanche, vient en troisième ligne. On n'estime guere la *tolpha* ou manne pésante des environs de Rome." Fourcroy supposes manna to consist of four different ingredients: 1. pure manna, which constitutes three-fourths of the whole; 2. a little common sugar; 3. a yellow nauseous smelling substance, to which it owes its purgative quality; and 4. mucilage. Brande tells us, in his Manual of Chemistry (vol. iii. p. 29.), that manna digested in nitric acid yields both oxalic and saclactic acids.

It would appear by the Transactions of the Literary Society of Bombay, from a statement made by Captain E. Frederick, who had travelled into Persia,

* See Springel's Historia rei Herbariæ; also Avicenna, 260, 262.
† See Recueil de Questions, &c., par Mr. Michaelis, p. 62.

that *Meerza Jiafer Tabeeb* a Persian physician, had discovered another sort of manna (on a shrub called in Arabic, *Athel*), which is in a slight degree astringent. The same physician extols that from the *alhagi tree* as the best and most laxative.

CXVIII.

MARJORAM, SWEET. *Mírzúnjoosh* مرزنجوش (Arab.) *Márroo* (Tam.) *Múrwa* مروا (Duk.) *Marjolaine* (Fr.) *Majoran* (Ger.) Αμαρακον (Gr.) ORIGANUM MAJORANA (Lin.)

Cl. and Ord. Didynamia Gymnospermia. Nat. Ord. Verticillatæ. *Majoran Dosten* (Nom. Triv. Willd.).

Sweet marjoram is a native of Portugal and Palestine, but is cultivated in some parts of Lower India. The flower, from its agreeable odour, is a favourite of the Hindoos, and is considered by their doctors as possessing cephalic qualities; and we know that the species called by the Egyptian Arabs *zatarhendie* زاتار هندي *zātār hindie* (origanum Ægyptiacum), Hasselquest mentions as possessing a most agreeable aromatic smell, and comforting the head. It is placed, I mean our article, by the Arabs of Arabia, amongst their Discutients, محللات Mohelilāt. There is a species of origanum to be met with in the upper provinces of Bengal, but which I have never seen, the origanum *Bengalense;* and I am informed that two other species are also cultivated there, viz. the *maru* and *creticum*, both of which are natives of Crete. Wild thyme (thymus serpillum), or, as it is

often improperly called, wild marjoram, is common in Persia, and is termed in Persian اربا *irpa*, and in Arabic *hāshā* حاشا.

Sweet marjoram has been supposed by some to be the σαμψυχον of the ancients: it is known to possess tonic virtues, but is now chiefly used in Europe as a culinary herb: it was introduced into the botanical garden of Calcutta in 1814. The French* still frequently prescribe the leaves: "pour resoudre ce qu'ils appellent la pituité de l'éstomach, et du poumon." It is an annual plant, having a long brown fibrous root, with downy, ovate, green leaves, and small white flowers. Laureiro found the plant in Cochin-China. (Flora Cochin, vol. ii. p. 374.)

Murray, in his Apparat. Medic. (vol. ii. p. 175.), in speaking of this plant, observes, "Tumores mammarum dolentes, scirrhosos, herba recens, viridis, per tempus applicata, feliciter dissipavit."

Mr. Moon, in his Catalogue of Ceylon Plants (p. 44.), gives place to a plant he calls origanum *majoranoides*, which he says is of a *woolly* nature.

CIX.

MASTICH. *Roomie mustiki* ரூமிமஸ்தகி (Tam.) *Sākés* (Turk.) *Roomie mustakie* رومي مستاڭي (Duk. and Hind.) *Arāh* اراء (Arab.) also *Auluk bagdadie* علك بغدادي (Arab.) *Kinneh* (Pers.) *Almacegu* (Port.) *Mastic* (Fr.) *Mastix* (Ger.) *Almaciga* (Span.) *Mastico* (It.)

PISTACIA LENTISCUS (Lin.)

* See Alibert's Elémens de Thérapeutique, vol. ii. pp. 205, 206.

Cl. and Ord. Dicœcia Pentandria. Nat. Ord. Amentaceæ (Lin.).

This resinous substance is considered by the Hindoo doctors as corroborant and balsamic, and is generally ordered by them in conjunction with *sala misrie* (salep), which they reckon very nutritious. The Mahometan women of high rank use it as a masticatory to preserve their teeth, and sweeten their breath; about which they show just as much anxiety as the ladies of the seraglio at Constantinople.

Mastich is brought to India from the island of Scios*, by way of the Red Sea. Sonini† tells us, that in Egypt the smoke inhaled into the lungs is reckoned of a poisonous nature.

Mastich, which comes to us in yellowish transparent brittle tears, is nearly inodorous, except when heated, and then it has an agreeable odour; chewed, it is almost insipid, feeling at first gritty, and ultimately soft; it has been considered as diuretic and astringent, but its virtues are trifling‡; in the arts it is employed in the composition of varnishes for toilet boxes and violins; together with gum sandarach, gum elemi, lac, alcohol, and in conjunction with turpentine, the jewellers lay it under the diamond to add to its lustre. *Virey*, in his "Histoire Naturelle des Medicamens" (p. 293.), tells us, that from the kernels of the lentisk, or mastich tree, an oil may be obtained which is fit for table; the same intelligent writer informs us, that according to Desfontaines

* See Dr. W. Wittman's Travels in Turkey, &c., p. 447., also Tavernier's Persian Travels, also Pocock's Travels.

† See his Travels, pp. 629, 630. Eng. Trans. The mastich of Scios is particularly mentioned by Pliny as being by far the best, he speaks of a white and black kind. See Nat. Hist. lib. xii. cap. xvii.

‡ See Thomson's London Dispensatory.

and Duhamel, the *pist. Atlantica* and *pist. chia* yield resins which resemble mastich.

I have been somewhat surprised to see by Elmore's "*Directory to the Trade of the Indian and China Sea,*" that he mentions mastich as a produce of Passier (Borneo). The tree is well known to be a native of Portugal, Italy, and Palestine; but is particularly abundant in Scios, where it is got by making incisions in the trunk and branches of the tree, which seldom rises higher than twelve feet, having leaves abruptly pinnate, of a lucid green colour on the upper part, and pale on the under side, with the male and female flowers on different plants. The pistacia lentiscus is growing in the botanical garden of Calcutta, introduced in 1806. The Arabians* place mastich amongst their hepatics, tonics, and astringents. It would seem by Dierbach's Mat. Med. of Hippocrates, chap. vii., that the pistacia lentiscus was known to the Greeks by the name of Σχινος, that sort they called Ρητινη σχινινη was mastich when mixed up with certain ointments.

The species *oleosa* grows in Cochin-China, and is there called *cay-deau-truong;* the drupe abounds in a yellow edible oil. Vide Laureiro (Flora Cochin-China, vol. ii. p. 616.).

CXX.

MELON, WATER. *Pitchă pullum* பிச்சம்பழம் (Tam.) *Turbooze* تربوز (Duk. and Hind.) *Dárbōjee* (Tel.) *Mándékee* (Mal.) *Pitchaghedie* †

* Avicenna treats of it under the name of madstthake, and speaks of its astringent and discutient quality; he moreover says: "Tussi et sanguinis rejectione prodest. Stomachum roborat et jecur." Vide Canon. Med. lib. ii. tract ii. p. 189.

† Another Cyngalese name for water melon is *komadu diya.*

(Cyng.) *Chaya pula* (Sans.) *Hinduanah* هندوانه (Pers.) *Bateekh zickē* *بطيخ زقي (Arab.) also *Shá-reej* شارج (Arab.) *Gourge laciniée* (Fr.) also *Melon d'eau* (Fr.) also *Shakara-koomatei* (Tam.) *Furbooza* (Mah.) *Cocomero* (It.) *Dubba farakis* (Aleppo.) CUCURBITA CITRULLUS (Lin.)

Cl. and Ord. Monœcia Monadelphia. Nat. Ord. Cucurbitaceæ (Lin.) *Wassermelonen* (Nom. Triv. Willd.).

This species of gourd, though it has not much flavour, is extremely refreshing, and is in great request amongst the natives of India during the hot season. The water-melon has been so named from the great quantity of pale red juice it contains; the vytians prescribe it to quench thirst†, and as an antiseptic in typhus fever; and I have myself given it in such cases, when I could not get oranges, with the happiest effects. The plant is common in many eastern countries, and is a native of Apulia, Calabria and Sicily; it is the anguria Indica of Rumphius (Amb. v. p. 400.), and is common in most of the eastern islands. There are five species of cucurbita growing in the botanical garden of Calcutta. The *lagenaria*, *pepo*, *melopepo*, *citrullus*, and a bitter or wild sort, all indigenous in India, except the first. Our article has a round, striated, long, branched, hairy, procumbent, diffused *stem*, with lateral bifid

* In Abulfaldi apud Cels., we find other Arabic names for water melon, such as *kasa-alhemar* قاثا الحمار and *zeesh* زبش (see vol. i. p. 371.)

† It appears by Burchell's Travels into the interior of Southern Africa, that the Bushmen quench their thirst with the watery juice which they find contained in the root of a plant of the genus asclepias, which they know by the name of *tky*; the root is about the size of a large round, flat turnip.

tendrils; *yellow flowers*, and fruit large, smooth, round or oblong, and a foot and a half in length. Five species of citrullus are growing in the royal botanical garden of Ceylon.*

The *musk melon* (cucumis melo) is an excellent fruit in India, and much sought after by the European inhabitants, though it is supposed to disagree with delicate stomachs, occasionally also inducing cholera, simply so called; this effect of the fruit is best obviated by means of a little pounded black pepper. It is an annual of the Cl. and Ord. Monœcia Monodelphia, and Nat. Ord. Cucurbitaceæ; it has been said that it was a native of Calmuc Tartary, an opinion adopted by Willdenow; in India it is cultivated by seeds brought from Persia†, where it is much prized, and is called *khurboozeh* خربوزه. The Arabians term it *bateekh* بطيخ. The Dukhanie and Hindoostanie name is also *khurboozah*; *bacacoy*, also *smangha* (Malay); *molam* pullum (Tam.); *popone* (It.)

The French are still in the habit of employing the seeds of the melon, as well as those of different gourds, in their treatment of inflammatory fevers, and in consequence have bestowed upon them the name of "*semences‡ froides.*" The Arabians, strange to say, have placed the dried musk melon seeds amongst their *Mafattatāt* مفتتات (Lithontriptica). Nine species of cucumis are growing in the botanical garden of Calcutta, all natives of India except the *melo*. Four species of cucumis are at present in the royal botanical garden of Ceylon. The Cyngalese for the common melon is *rata komadoo*. It is the ضمير of the Egyptian Arabs (Forsk. Egyp. Arab. p. 168.).

* See Mr. Moon's Catalogue of Ceylon Plants, p. 66.
† See Tavernier's Travels in Persia, book iv. chap. ii.
‡ See Alibert's Elémens de Thérapeutique, vol. i. p. 663.

CXXI

MILK, COW'S. *Páshúin paal* பசுவின்பால் (Tam.) *Aoopaloo* (Tel.) *Dood* (Hindooie) *Ghayka dood* گایکی دودھ (Duk.) *Ellakerrie* (Cyng.) *Gokshīra* गोक्षीर (Sans.) *Gaee-cha-dood* (Mah.) *Soosoo* سوسو (Mal.) *Lait* (Fr.) *Latte* (It.)

LAC VACCINUM.

Much has been said of the different kinds of milk in many of the Sanscrit and Tamool Medical Sastrums, but by none is the subject so fully treated of as by Aghastier in his celebrated work, entitled *Vytia Amjouroo.* It would occupy too much room, were I to enter at large into all his fanciful notions; suffice it here to observe, that he considers cow's milk as proper food for the young, and, as is indicated in many cases, for the more advanced, who require light nourishment. He conceives it to be the most aperient of all milk, and, what is fanciful enough, that it tends to clear the intellect. The milk of a white cow, he says, is of use in hypochondriacal cases; that of a red one, for such as suffer from biliary derangements; that of a black one, particularly if it has also a dark-coloured udder, he thinks beneficial for those who are troubled with phlegm; and last of all, that a cow which is of the colour of gold, yields milk that can cure all manner of disorders! in fact, he can scarcely find words to praise sufficiently the milk of this favourite and revered animal. Much then, he proceeds to say, will depend upon the time when the milk is taken: if drank in the morning it alleviates the pains of rheu-

matism; at noon it gives appetite, but if taken at bed-time it is good for every ailment of the body

The general names for milk of all kinds in Sanscrit are *khshīra* क्षीर, *payas* पयस, *dugdha* दुग्ध; the Arabians term it *lebnn* لبن; the Persians *sheer* شیر. Sour or curdled milk is in Sanscrit *dadhi* दधि, and in Hindoostanie *dahi;* it is given with a little black pepper in ozena (*pinas*), also in gonorrhœa (*prameh*).

Cow's milk, as a diet for the sick in India, European practitioners differ about; it certainly, in its pure state, lies heavy at the stomach of many full-grown people; others it renders drowsy. Whey is a most delightful and safe drink, and is peculiarly relished in the hot weather in India; so is *butter milk* (lac ebutyratum), which is much drank, being at once cooling, pleasant, and gently aperient; I am inclined to think, besides, that it has the peculiar quality of allaying that irritability of the stomach, sometimes occasioned by tea. In Tamool it is *moroo*. *Chaatch* ಮಜ್ಜಿಗೆ (Duk.) *Doogh* دوغ (Arab.) *Tsalla* (Tel.) *Takra* तक्र also *Dandāhata* दण्डाहत (Sans.) *Mutha* (Hind.) *Butter* in India is, generally speaking, most excellent, and is made * every morning by agitating† fresh milk. What is called *tyre* by the English in India is an excellent preparation of milk, being cooling, pleasant to the taste, and, from its slight acidity, gently opening; it is made by adding to warm fresh milk a little butter milk, and the whole allowed to stand all night; it is usually eaten with

* Or from agitating for some time the top or richest part of tyre, or sometimes the whole of it is used.

† The oldest mention of butter is supposed to be in the account given of the Scythians by Herodotus (iv. 2. p. 281.), prepared by agitating mare's milk.

rice. *Ghee* is butter that has been clarified by boiling, and afterwards having a little tyre, salt, or betel leaf added to it, by which means it may be kept for a long time when properly bottled; it is constantly employed in making curries and other rich Indian dishes. Before speaking of goat's milk, I shall just observe, that Dr. Sutton, of Greenwich, has lately given his opinions to the world on the subject of milk; he seems to think, however much he may differ from others, that milk may be taken as a safe and useful drink in fevers; and we know that Dr. Heberden has these words: "Lac et ova, nescio qua de causa a nonnullis interdicuntur in omni febre." In such cases, in India, I certainly should recommend its being abstained from.* Virey† says, that milk, as a diet, is suited best to dry temperaments; to the languid and pale it is injurious.

CXXII.

MILK, GOAT'S. *Aatoo paal* ஆட்டுப்பால் (Tam.) *Māy ká pāloo* (Tel.) *Chaylie-ka-dood* چھلي کا دود (Duk.) *Aja-kshīra* अजक्षीर (Sans.) *Jlookeerie* (Cyng.) also *Vellatoo paal* (Tam.)

LAC CAPRINUM.

The native practitioners consider goat's milk as a powerful restorative, and order it in consumptive complaints. In the *Padaurtasindaumanie*, a Tamool treatise on the qualities of food, we are told that

* The produce of various trees in India has been used as a substitute for butter; such as the expressed oil got from the seeds of the bassia longifolia, and the butter of the *Choorie* tree of the *Coomaoon* Mountains, bordering on Thibet.

† See Hist. Nat. des Med., p. 433.

goat's milk ought to be administered in such cases as are accompanied with a deficiency of bile, and in certain bowel complaints; it is moreover stated, that it affords a very wholesome nourishment to the body in weakly habits, and is particularly useful when the bowels are inclined to be over-loose, and the appetite delicate; it resembles very much cow's milk, except in its greater consistence*, and is by many preferred to it for tea; it throws up abundance of cream, which can be converted into butter.

The *milk of the ewe*, which is supposed to resemble cow's milk more than any other, is a favourite remedy of the Arabs and Persians; the first call it *leban zan* لبن ضان and place it amongst their cephalics; and the last term it *sheerimēsh* شیرمیش, and give a place to it amongst their aphrodisiacs. We are told by Dr. Hooper, in his valuable Medical Dictionary, that by experiments made on ewes' milk, it has been found that its cream is more abundant than that of the cow, and yields a butter not so consistent as cow's milk butter; its excellent cheese is well known. The Hindoos, it would appear, by what I find in the "*Vytia Anyouroo*" of Aghastier, have a notion that the milk of a *red ewe* increases too much both the bile and the phlegm, and brings on diarrhœa and difficulty of breathing!!

CXXIII.

MILK, ASSES'. *Káládу paal* கழுதைப்பால் (Tam.) *Gadilay paaloo* (Tel.) *Gadi-kā-dood*

* It is a singular thing enough, but the milk of goats is but little affected with the food these animals eat; they often feed on the branches even of the acrid milk hedge (euphorbia tirucalli), without the milk either suffering in taste or quality.

دودھ کدکا (Duk.) *Cotalookeerie* (Cyng.) *Khara-khīra* खरक्षीर (Sans.) *Ghaduva-tcha-dood* (Mah.)

LAC ASINÆ.

Asses' milk, which has a very strong resemblance to human milk in colour and consistence, is recommended by the native practitioners in maniacal cases; they also suppose it to possess virtues in leprous affections, particularly in what the Tamools call *coostum* (lepra arabum); in the *carin kirandie* (or black carpang or milk-rash of children), they order a certain quantity of it to be taken two or three times in the day. Asses' milk* differs from cow's milk in its cream, being less abundant and more insipid, in its containing less curd, but a greater proportion of sugar; its virtue as affording a light nutriment to the delicate is well known. Avicenna prescribed it in hectic fever. (Vide Canon. Med., lib. ii. tract ii. p. 185.)

I cannot learn that *mare's milk*† is ever used by the Hindoos: the modern Arabians consider it *labanul-khēl* لبن الخيل as narcotic, placing it amongst their *Mokédérrāt.* It contains a great quantity of the sugar of milk, and is on that account more fitted than others for *vinous* fermentation; hence the liquor prepared with it, which the Tartars call *koumiss*, which somewhat resembles that made from the

* The ass is found in a wild state in the desert country, which separates *Cattiwar* from *Cutch*, where it is called *khur* or *gurkhur*; the body is generally of an ash colour, the head unusually long, and the limbs strong, resembling the asses found in Tartary; they are extremely fierce, and must be taken in pits.

† The German physicians prescribe mare's milk in worm cases (tænia). See Dr. Good's Study of Medicine, vol. i. p. 325.

same milk, and termed by the Turks *yaourt*.* Of camel's milk, I find mention is made by Avicenna: "recens fœtarum camelarum lac cum ricinino oleo internas durities curat." (Vide Canon. Med., lib. ii. tract ii.)

The different kinds of milk hitherto examined chemically, are mare's, woman's, asses', goat's, sheep's, and cow's, and I have now mentioned them according to the quantity of sugar they contain. Parmentier could not make any butter from the cream of woman's milk, asses' milk, or mare's milk; and that from sheep he found always soft; it appears, however, from Virey's statement†, that from two pounds of woman's milk he obtained six drachms of butter, but from asses' and mare's he could procure none. The first mentioned gentleman divided milks into two classes; one abounding in serous and saline parts, which includes asses', mare's, and woman's; the other in rich or caseous and butyraceous parts, which includes cow's, goat's, and sheep's.

The milk of the *buffalo* (bos bubulus), is very abundant, but much thinner than that of the cow, and not so agreeable to the taste; from its plenty and cheapness it is a great source of comfort to the natives of the lower orders. By the *Vytia Anyouroo* of Aghastier, it appears, that the Hindoo doctors consider buffalo milk as predisposing to catarrh, and that it tends to cloud the intellect. In Sanscrit, the buffalo is *mahisha* महिष or *mahishī* महिषी. *Béynce* بهينس (Hind.) *Jāmoos* جاموس (Pers.) *Yéroom* (Tam.) *Yénnamoo* (Tel.) In Behar the native

* I have since learnt that mare's milk, is considered by the Hindoos of Upper India, as a useful medicine when applied to venereal sores; its Sanscrit name is *Hāyakshiri*.

† See his Histoire Naturelle des Médicamens, p. 112.

doctors prescribe it in cases of emaciation. *Gatraksin* (Sans.)

Thenard, who has, I believe, examined milk in general with great chemical accuracy, informs us, that the component parts of cow's milk are: 1 water, 2 acetus acid, 3 caseous, 4 butyraceous, 5 saccharine, 6 attractive matter, 7, 8 muriates of soda and potash, 9 sulphate of potash, 10, 11 sulphates of lime and magnesia.*

While on the subject of milk it may not be amiss to mention, that Baron Humboldt found a tree near *Barbula* (and which grows abundantly amongst the mountains above *Perquito*, situated on the N.E. of *Maracay*, a village to the west of *Caracas*), which yields, on wounding its branches, a quantity of glutinous milk, destitute of all acrimony, and of a balmy and agreeable smell; the distinguished traveller drank a good deal of it without the least bad effect. This is a singular substance, when we consider that almost all the lactescent plants are poisonous. For an account of the tree, the reader is referred to an interesting work, entitled "*Columbia*," (from p. 563 to 578.) This vegetable milk, analysed by Vauquelin, was found to consist of 1 wax, 2 fibrine, 3 sugar, 4 magnesian salt, and 5 water. The presence of fibrine in a vegetable production is a surprising fact, as it is very rarely met with, except in the secretions of animals. The tree is in Spanish called

* What is called sugar of milk, is obtained from milk by evaporation and crystallization; the invention is said to be Italian, and was first mentioned by Bartoletti in 1645. Ludovice Testi, who died at Venice in 1707, contributed much to make it known. This salt is now chiefly made in Switzerland and in Lorraine. It is prepared from new milk by boiling it with eggs, and when an imperfect separation of the milk is effected, straining it, then boiling it, and suffering it to crystallize. See Beckmann's History of Inventions, vol. iv. p. 603.

palo de vacca. Vauquelin, however, also discovered fibrine in the juice of the *papaw tree* (carica papaya, Lin.). See article *Paāl*, in Part ii. vol. ii. of this work.*

CXXIV.

MILLET, ITALIAN. *Ténnéy* தினை (Tam.) *Rawla* ರಾಳ (Duk.) *Cungnie* (Beng.) *Córáloo* (Tel.) *Kora* (Hind.) *Cay Khe* (Coch. Chin.) *Navonay* (Can.) *Navaria* (Mal.) *Dukhn* دخن (Arab.) *Kassob* (African). *Arzun* ارزن (Pers.) *Ténna* (Hort. Malab.) *Tana-hal* (Cyng.) *Priyangú* प्रियंगू (Sans.) also *Kangu* कंगू (Sans.) *Beertia* (Hind.) *Bahjeree* (Guz.) *Chenna* (Mah.) *Miglio.*

PANICUM† ITALICUM (Lin.)

Cl. and Ord. Triandria Digynia. Nat. Ord. Gramina. *Welfcher Fennich* (Nom. Triv. Willd.).

I have given this small round grain a place here from certain knowledge of its excellence; it is much prized by the native Indians of all descriptions, who make cakes of it and also a kind of porridge; for the purposes of pastry it is little if it at all inferior to wheat, and, when boiled with milk, it forms a light and pleasant meal for invalids. The Brahmins hold it in high estimation, indeed, more than any other grain. The *culm* is annual and seldom rises higher than a foot and half. Three varieties of it are cultivated in Mysore; *bili* on watered land, *kempa* in palm gardens, and *mobu* in dry fields; in more West-

* The seeds of the bassia butyracea (Roxb.), on being boiled, yield a rich oily substance, which the natives of the Circar Mountains use as ghee, or butter.

† No fewer than 30 species of panicum are growing in the royal botanical garden of Ceylon.

ern tracts other varieties, *ghedu*, *jotu*, and *dodu* are cultivated. Barrow, in his Travels in China (p. 83.), tells us, that it is common in that country. It grows in abundance in the Southern parts of Europe, particularly in Portugal, where it is called *milho painco*.

CXXV.

MUDAR ROOT. See article *Yercum vayr* in this Part (Part I.) of the work.

CXXVI.

MULLET. *Máddávēy-meen* மடவைமீன் (Tam.) *Bonta* (Tel.) *Púrhen* پرهی (Hind.) *Māhee úrúbie* ماهي عربي (Duk.) *Málāi* (Malealie.) *Mulet* (Fr.) *Triglia* (It.) جناغ (Arab.) جناغ (Pers.)

MUGIL CEPHALUS.

This is a most excellent fish in India, but is, perhaps, a little too fat and rich for those who are delicate; it is much prized by the natives, and is very abundant in the Indian seas. It is usually from eight to twelve inches long, or more, and has, of course, the distinguishing characters of its genus, which are, a lower jaw, carinate within; scales striated; two fins on the back. It is used both in its fresh and salted state. There are seven species belonging to this genus; ours is the most common, and is what was so much prized by the ancients. The spawn of this fish, salted and dried, forms a kind of *cavier*, called by the Italians *botorāgo*. As food,

generally speaking, the *Vytians* consider fish* as less heating than butcher meat; less likely to excite an inordinate flow of bile; more easily digested, and to be particularly indicated in cases of diabetes. When taken in too great a quantity, however, or when too long kept, it is apt to bring on leprosy, especially if a milk diet is at the same time indulged in.

CXXVII.

MUSK. *Castoori* கஸ்தூரி (Tam. Tel. Sans.) *Jébāt* (Mal.) *Dedes* (Jav.) *Mishk* مشک (Duk. and Pers.) *Kustowrie* (Hindooie.) *Mishk* مشک (Arab.) *Rutta ooroola* (Cyng.) *Muskus* (Dut.) *Almiscar* (Port.) *Desmer* (Dan.) *Musc* (Fr.) *Bisam* (Ger.) *Muschio* (It.) كستورى (Mal.)

MOSCHUS MOSCHIFERUS.

The native practitioners of India, like us, consider musk as stimulant and antispasmodic; and prescribe it in general spasmodic affections, and in lock-jaw. The Tamool doctors especially, suppose it to be useful in what they call *manda jennie* (convulsions of children), which they conceive to proceed from indigested milk, as the name implies. They also administer it in dyspepsia and *kistnah dōshum* (typhus), and, when combined with opium, in dysenteric complaints.

The odour of musk is powerful and altogether peculiar; we cannot well call it aromatic, yet it

* The natives of India make great use of salt fish, which is carried into the interior parts of the country, and must assist in counteracting any bad effects that might arise from their constant use of vegetable diet.

would be difficult to say by what other word it could better be described; it is of a deep-brown colour, and has a bitterish and heavy taste. This substance is a secretion, found in a small bag situated betwixt the navel and prepuce of the male of an animal of the deer kind, resembling a good deal what is called the hog-deer of Bengal. The animal, which is in zoology moschus moschiferus, is common in *Kuchar* and Lower Thibet*, where it is called *kustura*, also *La*, and the vascular covering of the musk *latcha*. Colonel Kirkpatrick tells us, that the musk-deer is also a native of the *Turyanie*, in Nepaul; and it would seem that it has been occasionally met with in Cochin-China, in Tonquin, and in the Birmah dominions.

The herdsmen of Thibet often adulterate musk. When we see it of a rather light-brown colour, and granulated, it may be considered as impure; if dark, homogeneous and divided in many parts by a thin cuticle, it is of a good quality. Pure musk, Dr. Thomson informs us in his London Dispensatory, inflames without running, and is converted into charcoal. Aetius is the first author who mentions it as a medicine. In England it was little used before the beginning of the sixteenth century.

European practitioners prescribe musk in gout, tetanus, epilepsy, cholera, hooping-cough, hydrophobia, and typhus fever. The dose is from gr. x. to grs. xxx.; that of the mist. moschat. from ʒi. to ʒiiss. every third or fourth hour. Musk is adulterated in two ways, either by *dried blood* or *asphaltum*. (See Paris Pharmacologia.)

Dr. Duncan, junior, in his Edinburgh Dispensa-

* See Turner's Embassy to the Court of the Teshoo Lama, pp. 201, 202.

tory, extols highly the powers of musk as an antispasmodic, which often succeeds, he says, when other things fail, and raises the pulse without heating.

The Arabians place musk amongst their *Makuwyat démagh* مقويات دماغ (Cephalics); for the opinions of the Persian* physicians respecting it, the reader may consult a valuable work, entitled *Maadeni Shéfa* معدن شفا, or "The Mine of Remedies", by a medical practitioner of Bokharia, called *Aby Ben Hussen*, and written in 1363.

A factitious musk may be made by digesting together rectified oil of amber, one part, with nitric acid, four parts, to be afterwards well washed in water; the smell is similar to that of musk or ambergris, and may be substituted for them as medicine. (See Gray's Supplement to the Pharmacopœia, p. 230.)

CXXVIII.

MUSTARD. *Kádághoo* கடுகு (Tam.) *Rāiy* రాయి (Duk.) *Sásávie* (Mal.) *Gan-aba* (Cyng.) *Rájiká* राजिका (Sans.) *Riey* (Hindooie.) *Avaloo* (Tel.) *Khirdal* خردال (Arab.) *Rāī* (Hind.) *Mostarda* (Port.) *Moutarde* (Fr.) *Senfsamen* (Ger.) *Grano de mostaza* (Sp.) *Sirshuff* سرشف (Pers.) *Rie* (Mah.) *Senapa* (It.) *Kiai-tsai* (Chin.)

SINAPIS CHINENSIS (Lin.)

Cl. and Ord. Tetradynamia Siliquosa. Nat. Ord. Siliquosæ. *Chinesischer Senf* (Nom. Triv. Willd.).

The pungent, bitterish, acrid, and biting seeds of the sinapis chinensis, are considered by the Hindoo

* Rhazes extols musk highly for all those complaints, which he supposes originate in a diminished vital heat in the brain. Vide Oper. Rhaz. De Remed. lib. iii. p. 74.

and Mahometan practitioners as stimulant and stomachic, and laxative; they also, when bruised into powder, use them externally in rheumatic and paralytic affections, mixed occasionally with a little warm vinegar.

Several species of sinapis are cultivated in Bengal, on account of the very useful edible oil procured from the seeds. The most common are the sinapis dichotoma (Roxb. MSS.); the Hindoostanie name of which is *serson*, and Sanscrit *sarshapa*. The sinapis ramosa (Roxb. MSS.); the Hindoostanie name of which is *rāi*, and Sanscrit *rajica*, names also given to our article; and another species, called in Hindoostanie *tori*, and in Sanscrit *tuverica*. The excellent Dr. Carey, in the 10th volume of Asiatic* Researches, speaks of a species, sinapis glauca (*sheta sirsha*, Hind.). With respect to their medicinal qualities, Dr. Fleming, in his Catalogue of Indian Medicinal Plants (p. 36.), says, that the seeds of all these correspond exactly with those of the sinapis nigra (Willd.). Fifteen species of sinapis are growing in the botanical garden of Calcutta, all of them oriental plants, except the sinapis nigra (the Ναπυ of the Greeks), which was brought from England by Colonel Garstin. But two species of sinapis appear to be growing in the royal botanical garden of Ceylon†, our article, and the *sinapis alba*, which the Cyngalese call *rata-aba*.

European practitioners recommend an infusion of the bruised seed in paralysis; also externally, an embrocation made with the farina of the pounded seeds, in vinegar. A valuable mustard seed cataplasm, is prepared with equal parts of the pulverised seeds and

* See Asiatic Researches for 1808, vol. x. p. 15.
† See Mr. Moon's Catalogue of Ceylon Plants, p. 47.

crumb of bread; it is applied to the soles of the feet, in the sinking stages of fever and other diseases. A table-spoonful of the unbruised seed, given night and morning, promotes the secretion of urine in dropsies, and is at once stomachic*, aperient, and diuretic; a pound of the whey may be drank for the same purposes twice daily: this is made by boiling two or three table-spoonfuls of the bruised seeds in a pint of milk, and afterwards separating the curd.

The ancients, according to Pliny†, thought highly of mustard as a medicine, and cultivated three different kinds of it; in speaking of it, he says, "Ad serpentium ictus et scorpionum tritum cum aceto illinetur. Fungorum venena discutit; contra pituitam tenetur in ore, donec liquescat, aut gargarizatur cum aqua mulsa; stomachico utilissimum contra omnia vitia, pulmonibusque." The Greeks knew it but by two names, Ναπυ and Σίνηπι. Rhazes‡, the Arabian writer, says of it "Sinapi calidum est, quod in palato positum phlegma incidit vermes præterea expellit, atque apostemata maturat."

CXXIX.

MUTTON. *Aatoo irichie* (Tam.) *Vaynta koora* (Tel.) *Dagin doomba* (Mal.)

* I am inclined to think, that mustard taken internally, possesses greater virtues than have yet been fully ascertained; I have known it of the greatest use in paralytic affections and general debility; and it would appear by the observations of Callisen, that the white mustard seed had been found by him to be a most powerful remedy in the low state of typhus fever, when musk, camphor, and other remedies had failed. See Roque's Phytographie Medicale, vol. ii. p. 191.

† Vide C. Plinii, Nat. Hist. tom. ii. lib. xx. cap. 22.

‡ Vide Rhaz. Oper. de re Med. lib. iii. p. 87.

Bukryka gosht بکري کي ڈوشت (Duk.) *Aja mamasa* (Sans.) also in Duk. *Pūtla ka gosht* پوتلہ کا ڈوشت *Goshti mēsh* ڈوشت میش (Pers.) *Bukry-che-mas* (Mah.) *Castrato* (It.) *Mouton* (Fr.)

CARO OVILLA.

Mutton in India, when the sheep has been well fed, which is now generally the case at all large stations, is excellent; in Bengal the Europeans are very particular in this respect, and are at much more pains to have mutton of a superior quality than they are on the coasts of Coromandel or Malabar.

There are various kinds of sheep (ovis aries) in India, differing considerably in size, shape, &c.; but the great distinction is, that there are some that bear a kind of coarse wool, while others are covered with hair. This is a good deal owing to the climate, as it may be hot or cool; in the Carnatic, where the heat is great, they have naturally hair, are long legged, and do not so readily get fat as those of the Bengal provinces, Mysore, and Coimbatore, which resemble more the sheep of Europe, bearing wool, but of a very coarse kind, of which an inferior sort of blanket is made, for which purpose the shaggy hair is also occasionally employed. In the *Bhote* country, which is a vast mountainous tract, bounded by the Indus on the East, on the West by the Burhampooter, and on the North by the Hemalāya Mountains; the sheep is a large*, strong, and stately animal, not unlike the

* Forming a great contrast with the *purik sheep* of *Ladakh*, as well described by Mr. Moorcroft: These, he says, when full grown, are not larger than South Down lambs of five or six months old, but are remarkable for the fineness of the fleece, and flavour of the mutton. See Transactions of the Royal Asiatic Society of Great Britain and Ireland, vol. i. Part I. p. 49.

Leicestershire breed; the wool of it towards the South is coarse, but farther North is finer, and the mutton very good. The sheep is the only beast of burthen that travellers have in those snowy countries, and carries about fifteen seers. The wool in the coldest regions is said to be little inferior in fineness to the fleece of the shawl goat, and is made into woollen cloth by the women. In an interesting paper in the Asiatic Journal for March, 1823, by Mr. Kendal, it will be seen, that he considers the animal which Mr. Frazer found in the Hemalāya Mountains, there called *burrel*, and which is termed *baral* by Mr. Moorcroft, is no other than the sheep in its wild state, and not, as some have supposed, the link betwixt the deer and sheep; it is remarkable for its enormous branching horns. It is found also in Kamtscatchka, Siberia, and Tartary, and in North America; nay, Pennant says it was formerly in Great Britain: it is the *musmon* of the Greeks, the *mouflon* of Buffon, the *caleatoo* of the Tamooleans, and Mr. Colebrooke suggests, that it is no other than the *ovis ammon* of North America. The *Algonkin* nations of India call it *miatic* or ugly deer. In winter the hair is long and shaggy, including a highly-respectable beard! In summer the hair falls off, and the under coat becomes a grey wool; the legs are slender and long; the agility of the motions of this animal, much resemble those of the deer kind. Mr. Kendal, however, concludes his account by saying, that the *burrel* is, notwithstanding, a sheep, and the only sheep or original type which nature has planted on the globe.

In Nepaul the mutton is, by all accounts, of a superior quality, and one breed of sheep there, the smallest, and called *kahgia*, is covered with an excel-

lent wool. The sheep of Thibet are very large, and are used by the inhabitants of *Bootan* as beasts of burthen; both their mutton and wool are much better than those of more southern latitudes.

The Cape of Good Hope sheep are distinguished by their long, thick tails*, which are fat, and much used by the natives in preparing their greasy, and to European stomachs, unpalatable food; the wool is coarse, and the mutton not delicate.

As a diet for the sick, I conceive mutton to be every way inferior to beef, kid, or lamb; it is said to be, and I believe it is so, the most easily digested of all kinds of butcher meat by men in health, but when fat it has a certain heaviness of taste, or perhaps it might be better expressed by a *strongness* of flavour, which by no means recommends it to an invalid.

In speaking of the sheep of Malabar, Dr. Buchanan (now Hamilton) informs us, that there are two kinds, the *curumbar* and *shaymbliar*. The first are short bodied, tail short, for the most part white, with a black head; above the Ghauts often black, wool thick and curly, with little hair interwoven. The second, the *shaymbliar*, are more slender, wool very scanty, their principal covering being hair; in the low country they are commonly of a reddish brown, but in Mysore they are usually black. In the Carnatic, the Tamools call the wool-bearing sheep *koorumbādoo*, and the other *shémbili* or *semmalie autoo*.

* A sheep of nearly the same kind is common in some of the Persian provinces, and the tail considered as an emollient. The Arabians call the tail *ulyeah* الية the Persians *dumdumbeh* دم دنبه in Hindoostanie it is *dumkey key poonteh*. The same variety is common also in Cabul, and there called, by Mr. Elphinstone's account, *doomba*; he tells us, their tails are a foot broad and composed almost entirely of fat. See his Account of Cabul, p. 143.

In Aghastier's Medical Sastrum of *Vytia Anyouroo*, he speaks rather unfavourably of the mutton of the first, as having a tendency to promote too much the secretion of bile!!

The enlightened and excellent Dr. F. Hamilton, above mentioned, in his Account of the District of *Puraniya*, notices a breed of sheep in that part of India, and there called *garar*, which are distinguished by their long tails, and which, he says, resemble more the sheep of Europe than any he had seen in India; he also notices two other breeds of sheep common there, and that the wool of both is made into blankets; one of these is termed *bheré*, the other *bhera*. I take this opportunity of gratefully acknowledging the obligations I am under to that gentleman for much valuable information; and for the indulgence he has so liberally and politely granted me of perusing his, I must say, inestimable manuscripts, deposited in the library of the East India Company, at the India House.

CXXX.

MYROBALAN, BELLERIC. *Tānikāi* தானிக்காய் (Tam.) *Búlla* ಬುಲ್ಲ (Duk.) *Béhéyra* (Hind.) *Béléyluj* بليلج (Arab.) *Béleyleh* بليله (Pers.) *Boolloo* (Cyng.) *Bahira* (Sans.)

TERMINALIA BELLERICA (Roxb.)

Cl. and Ord. Polygamia Monœcia. Nat. Ord. Elœagni (Juss.)

The fruit, of the belleric myrobalan, in its dried state, is little larger than a gall nut, but not so regu-

lar in shape, of a dirty brown colour, and astringent taste, and is sometimes used by the natives in cases requiring medicines of this nature. In the Mogul dominions, as we learn by the *Ulfaz Udwiyeh*, this myrobalan is considered as astringent, attenuant, and tonic; the dose, one to three direms. The large tree, which produces it, is common in Mysore, where it is called *tari*, and hence the name that was bestowed on it by Dr. Buchanan (now Hamilton), *myrobolanus taria;* it is the *tani* of Rheed's Hort. Malab., and shall be further noticed hereafter.

For an account of the use of this myrobalan in the arts, the reader is referred to another part of this work; its astringency has been ascertained to be pretty nearly equal to that of the emblic myrobalan. Four species of *terminalia* are growing in Ceylon.

CXXXI.

MYROBALAN CHEBULIC. *Kádúkāi* கடுக்காய் (Tam.) *Cárákāia* (Tel.) *Huldah* هلدا (Duk.) *Har* also *Hara* (Hind.) *Aráloo* (Cyng.) *Haritaka* हारितक (Sans.) *Hélélije kābūli* هليلج كابلي (Arab.) *Helileh kélān* هليله كلان (Pers.) *Umbe-d-her* (Hindooie).

TERMINALIA CHEBULA (Willd.)

The fruit of this species of terminalia is infinitely more astringent than that of the preceding, and is, on that account, much more used by the Hindoos in their arts and manufactures*; nay, it would appear

* See Asiatic Researches, vol. iv. p. 41. See also some account of the *gall* which grows on the terminalia chebula, in Part III. of this work.

by some experiments made by Dr. Roxburgh*, that it is even more astringent than the Aleppo galls. In its dried state, in which we find it in the bazars, it is about the size of a large Spanish olive, of an oblong ovate shape, yellow brown colour, and is marked with five edges and five furrows alternately.

Kádúkāi, well rubbed with an equal proportion of *cúttácāmboo* (see article Catechu), is considered by the native practitioners as an excellent application in the apthous complaints of children and adults; the last of which is a frequent and most dangerous affection amongst the Hindoos. The tree which yields this myrobalan is common in the Mysore country, where it is called *arúlay*, and hence the name Dr. Buchanan bestowed upon it, *myrabolanus arula;* it is the terminalia chebula (Willd.), and to which he has given the trivial name of *zweidrusiger catappenbaum.* D'Herbelot, in his Bibliotheque Orientale, expresses an opinion, that the Arabic name of the chebulic myrobalan is taken from the word *cabul;* the article having been first brought to Arabia from the country so named. It was on this species of myrobalan, or rather terminalia, that Dr. Roxburgh† found the *larva* of the coccus or kermes, about three-eighths of an inch long and a quarter broad; and which, he thinks, could they be procured in any quantity, might prove as valuable a dye‡ as the red dye of the cochineal insect.

What is called *zengi har* (Hindooie) in the Bengal

* See Oriental Repertory, vol. i. p. 23.

† See Coromandel Plants, vol. ii. pp. 53, 54.

‡ It was called by the ancients coccus scarlatinum, they preferred that of Galatia and Armenia; at present it is gathered in Languedoc, and is found on the *quercus coccifera* (Lin.). The insect is used for dyeing, chiefly wool, when bruised it has a pleasant smell; the taste is a little bitter, rough and pungent.

provinces, *singhi* (Tam.), and *kurkadaga* (Sans.), is the Indian or black myrobalan of old writers, and is, in fact, the unripe dried fruit of the terminalia chebula. The native doctors recommend it as a brisk purge. It is about the size of a pistachio-nut, and of a deep black colour, oblong, pointed, slender, and has scarcely the rudiments of the nut. The Arabians call it *ahleelej-asood* اسود اهليلج*, and the Persians *heleeleh seeah* سياه هليله; they give it in decoction as a cathartic, in doses from 1 to 2 direms, with the addition of a little honey. The terminalia chebula seldom rises higher than eighteen or twenty feet, with naked, ovate, mostly opposite leaves, petioles biglandular above, racemes simple; all the flowers are hermaphrodite.

What is called the citrine† myrobalan (terminalia citrina) is ranked amongst the fruits; it is about the size of a French plum, and is often made into pickle; its Sanscrit name is *liba*, its Hindoostanie *harva*, and its Canarese *alay-gara*. (Further particulars in Part IV. of this work.)

CXXXII.

MYROBALAN EMBLIC. *Néllie kāi* நெல்லிக்காய் Tam.) *Woosherikāia* (Tel.) *Aonlá* اونلا (Duk.) *Anola* انولا (Hind.) *Amlej* املج (Hindooie.) *Hac-min-san* (Coch. Chin.) *Amleh* املة (Pers.) *Amalaka* अमलक (Sans.) also *Aun-*

* This myrobalan was supposed by Rhazes to have virtues in cases of melancholia. Vide Oper. Rhaz. de Remedies, lib. i. p.437.

† This myrobalan the same writer believed to have virtues in cases of cholera; again, he says of it, "bilem rubeam, et humores educat." Vide idem, p. 207.

werd (Hind.) also *Aongra* (Hind.) . *Awusada-nelli* (Cyng.) *Cay-boung-Ngot* (Cochin-Chin.)

PHYLLANTHUS EMBLICA (Lin.)

Cl. and Ord. Monœcia Monodelphia. Nat. Ord. Tricoccæ (Lin.) *Baumartiger Phyllanthus* (Nom. Triv. Willd.).

The emblic myrobalan is the produce of the *myrobalanus emblica* of Rumphius, and is reckoned amongst the Indian fruits; it is frequently made into pickle. When fresh it resembles much the *chilli-mellie* (fruit of the *cicca disticha*, Lin.); it is acid, astringent, has a dark stone inside, and is one of those articles which were formerly known in Europe under the general name of myrobalans, but which have all been long discarded from our dispensatories. Dr. Fleeming tells us, that the present article is in general use amongst the Hindoo physicians as an *eccoprotic*, and enters as an essential ingredient into the preparation of the *bitlaban*, to be afterwards noticed in Part II. of this work.

This myrobalan, in its dried state, is called in Tamool *néllie moolie;* it is then about the size of a small marble, of a dirty, dark-brown colour, and irregular surface, possessing a considerable degree of astringency. Avicenna* speaks of it under the name of آمله, and tells us, that the Arabs sometimes call the fruit سنبس (Suk.) The tree which yields it is the *Boa malacca* of the Malays† and Javanese, and the *nelli camarum* of the Hortus Malab. i. p. 69. t. 38.

All these three myrobalans are to be met with in

* See Avicenna, p. 128.; also Sprengel's Historia Rei Herbariæ, p. 267.

† It is a native of Cochin-China and China: of it Laureiro says, "arbuscula, *ramis* diffusis, *folia* oblongata, *bacca*, sub pyriformis, carnosa, sub acida, edulis." Flor. Cochin-Chin. vol. ii. p. 553.

most parts of Lower India. In Bengal they grow in abundance; in Java, we are told by Bontius, that the Dutch are in the habit of employing the emblic and beleric sorts daily in their hospitals, in dysenteric and bilious affections. The ancients, we are informed, often prepared a plaister with powder of myrobalans, elatereum, litharge and turpentine, which they supposed had great virtues as a vulnerary. For a curious and interesting account of the different kinds of myrobalans, the reader is referred to a Persian treatise on medicine, entitled, *Mekzen-ul-adviyeh*, by Muhammed *Hosen Shirazi*.

The phyllanthus emblica does not rise higher than fifteen or sixteen feet, the leaves are pinnate, floriferous, and have very narrow leaflets; it is also a native of China and Cochin-China, in the first mentioned country, Loureiro* says, the berry is juiceless. Ten species of phyllanthus grow in the royal botanical garden of Ceylon.

CXXXIII.

MINT. *Widdatilam* (Tam.) *Poodina* پودینه (Pers. and Duk.) *Nana* نعنع (Arab.) also *Hibbuk* حبق (Arab.) *Baume verte* (Fr.) *Frauenmurze* (Ger.) *Menta romana* (It.)

MENTHA SATIVA (Var.)

Cl. and Ord. Didynamia Gymnospermia. Nat. Ord. Verticillatæ. *Zahme Munze* (Nom. Triv. Willd.)

* Vide Flora Cochin-China, vol. ii. p. 553.

This mint is occasionally prescribed by the Mahometan practitioners in dyspeptic complaints, and to stop vomiting. The Arabians and Persians place it amongst their Mulittifat ملطفات (Attenuentia). In Bengal it is chiefly used for culinary purposes. Dr. Fleming observes, that it is a different plant from the *spear* mint (menstra viridis), and Dr. Roxburgh thinks, that it comes nearest to the mentha sativa; but as the first of these gentlemen justly observes, it is of no consequence, as the *podina* possesses fully the aromatic flavour, as well as the stomachic, antispasmodic and emmenagogue virtues, which seem common to most of the species of the genus. Six species of mentha are growing in the botanical garden of Calcutta; five species grow in Ceylon. Alibert* takes no notice of the mentha sativa, or m. viridis, but extols the mentha crispa (*rau-hung* Cochin-Chin.) in cases of flatulence, hysteria, and spasmodic colic. Mint, the Μινθη of the Greeks, is often alluded to by the ancients: Theophrastus speaks highly of it; Pliny dwells chiefly on its delightful odour†, and of its quality of preventing milk from soon turning sour. The men. peperita grows in Japan, and is there called *faka*.

CXXXIV.

MYRRH. *Válátípōlum* வாலாதிபோலம் (Tam.) also *Páléndra bōlum* and *Villey bolum* (Tam.) *Balintra bolum* (Tel.) *Vola* वोल (Sans.) *Heera bol* هيرا بل (Duk.) *Bowl* (Hindooie) *Murr* مر

* See his Nouveaux Elémens de Thérapeutic, vol. ii. p. 129.
† See Pliny's Nat. Hist. lib. xix. cap. viii. p. 583.

(Arab.) *Manisan lebah* (Malay) *Madu* (Jav.) *Madu* (Bali.) *Mirra* (Port.) *Mirrhe* (Dut.) *Myrrhen* (Ger.) *Myrrhe* (Fr.) *Mirra* (It.)

MYRRHA.

It is a reproach to the science of medicine, that the tree which produces this gum-resin has not yet been satisfactorily ascertained; it is said to be a native of Azam, in Africa*, also *Hadramaut*, a province of Arabia† Felix, and of Abyssinia‡, growing, according to Bruce, along the coast towards the Straits of Babelmandel; that gentleman observes (vol. v. Appendix, p. 27.), that the leaf of the myrrh tree resembles much that of the *acacia vera*, and that the bark is altogether like that of the same tree, from which, we might be induced to suppose, that the plant was a mimosa; but as Dr. Duncan, junior, very justly observes, in his excellent edition of the Edinburgh Dispensatory, "all the mimosas with which we are sufficiently acquainted furnish a pure gum, not a gum-resin." The Arabians term the acacia vera قرظ also سنط

That the tree should not have been accurately ascertained is the more to be wondered at, when we reflect, that myrrh has been used both as a perfume and medicine upwards of two thousand years. We are told by Arrian||, that Alexander's army found vast numbers of myrrh trees growing in the territory of the *Gadrossi*, and that the gum was gathered by the physicians; it was one of the sixteen ingredients which composed the famous *zulphi*, which, it is

* See Dr. Vincent's Account of the Commerce and Navigation of Ancient India, p. 127.

† See Niebhur's Travels in Arabia, vol. ii. p. 207.

‡ See Lockman's Travels of the Jesuits, vol. i. p. 264.

|| See Rooke's Arrian, vol. ii. pp. 115. 180.

said, inflamed every night to the setting sun in the temple of Vulcan, at Memphis.* Plutarch has preserved the recipe (De Is. et Osir. c. 81. Squire's edition); and Theophrastus describes an unguent formed by the pastophori, of which myrrh and cinnamon were principal ingredients. Pliny particularly mentions the appearance of the myrrh tree, and informs us, that in his day there were known no less than six different kinds of myrrh, chiefly to be met with in Arabia; he notices its often being adulterated with gum-mastich, "Adulteratur lentisci glebes, et gummi" (lib. xii. cap. xvi.); of it Celsus says, "myrrha facultatem habet alvum moliendi; vulnus glutinat; pus concoquit et movet," or words similar to that effect (lib. iii. cap. xx., also, lib. v. cap. ii.).

The *Vytians* in India order this substance occasionally in such cases as require gentle cordials; they also employ it externally, when mixed with lime-juice, as a repellent in tumours and violent bruises.

European practitioners consider the fragrant, bitter, and aromatic gum-resin, as stimulant, tonic and expectorant, and administer it accordingly in chlorosis, cases of debility, and in certain stages of pulmonary consumption; but it must be given with caution, as it is apt to quicken the pulse considerably, and increase suddenly the heat of the body; it is often employed with advantage in humoural asthma and chronic catarrh; a solution of it in alcohol is a good local stimulant for spungy gums, and correcting the fetid discharge of vitiated ulcers. The dose of the substance is from gr. xv. to ℈i. The pulv. myrrhæ comp. (ph. Lond.) in doses of one or two scruples is a powerful emmenagogue.

* See Disquisitions on the History of Ancient Medicine, by Dr. R. Millar, p. 310.

The modern Arabians * place this gum-resin amongst their *Munzijat* منضجات (Suppurantia). Its qualities may be found fully treated of in the *Hulli Mujiz al Canun* حل موجز القانون, an Arabic medical work, by *Nafez Ben Aviez.*

Braconnot informs us, that 100 parts of myrrh consist of 23 of resin, and 77 of gum; but Dr. Thomson, by his experiments, found somewhat different results, corresponding more with Pelletier, who made the proportions to be 34.68 of resin, and 66.32 of gum. An inferior kind of myrrh is sometimes exposed for sale in the bazars of Lower India, under the Tamool name of *villey bolum.*

CXXXV.

NATCHENNY. *Kelwărăgoo* கேள்வரகு (Tam.) *Rāgie* راگي (Duk.) *Moorooa* (Beng.) *Tamidaloo*, also *Ponassa* (Tel.) *Mootāmy* (Malealie) *Tsjettipullu* (Hort. Mal. xii. p. 149. t. 78.) *Rājikā* राजिका (Sans.)

CYNOSURUS CORACANUS (Lin.)

Cl. and Ord. Triandria Digynia.

Natchenny is the name given by Europeans, on the Coromandel coast, to a useful and most valuable grain, which is eaten and prized by the native Indians of all descriptions; it is about the size of mustard seed, and darkish coloured; it is either made

* Avicenna speaks highly in favour of myrrh, "Aperit, flatus discutit, adstringit, glutinat, emollit; ad laxitatem, et inflationem ventriculi prodest myrrha pura et sincera; but he says not a word of the tree which yields it. Canon. lib. ii. tract ii. p. 197.

into cakes, or is eaten as porridge is in Scotland with milk; it is pleasant to the taste, and in its nature aperient. It is called in Tinnevelly *cāpā*, and in some parts of Hindoostan *maud*. In Mysore three kinds are cultivated: *cari*, *kempu* and *kulupaṛia*. The plant is the *eleusine coracana* of Gærtner; and rises to the height of three or four feet, having large, bifarious, smooth leaves, and a corolla with valves nearly equal (See Flora Indica, vol. i. p. 343.).

CXXXVI.

NIGHTSHADE, DEADLY. *Sug-unggor* سگ انگور (Hind.) *Roobáh turbuc* روباہ تربک (Pers.) *Inubas saleb* عنب الثعلب (Arab.) *Belladone* (Fr.) *Tollkraut* (Ger.) *Belladona* (It.)

ATROPA BELLADONA (Lin.)

Cl. and Ord. Pentandria Monogynia. Nat. Ord. Luridæ (Lin.)

I have merely given this a place here from finding that it was a plant well known in the Mogul country, and to the Arabians* and Persians, who place it, like us, amongst their narcotics, *Mokederrat* مخدرات; I have never seen it in India. It is a perennial, found in many parts of Europe, and by no means uncommon in Britain, especially in church-yards and on dung-hills. It has a thick, fleshy root, from which spring many purple-coloured herbaceous, annual stems; the root-leaves are often a foot long and five inches broad; the stem-leaves are egg-shaped, on short pe-

* The name of *ungoor shefa* انگور شفا is, I am told, given to a species of atropha in the upper provinces of Bengal.

tioles, pointed, entire, of a dusky-green colour above, and paler below; the flowers are large, nodding, having a very faint narcotic odour; the berry is large, roundish, at first green, but when ripe of a shining black colour, containing many seeds, and a violet-coloured juice. Every part of the plant is poisonous; in medicine the leaves (which are inodorous, nauseous, sweetish, and subacrid) are chiefly employed. Besides being powerfully narcotic, the deadly nightshade is diaphoretic and diuretic. The complaints for which it has been recommended in England, are schirrous and cancerous affections, obstinate intermittents, rheumatism, amaurosis, gout, and palsy; and Hufeland was of opinion that it had the power of allaying convulsions arising from scrophulous irritation; externally, its use has been found very efficacious in mitigating the pain of cancerous and ill-conditioned sores, either in the form of fomentation, or by sprinkling a little of the powder of the leaves over the part affected. The infusion dropt into the eye produces a singular dilatation of the pupil. The physicians on the continent, and some of great note, such as *Dehaen*, *Heister*, and more recently *Rahn* of Zurich, contend that the belladona is not only inefficacious in cancerous complaints, but in many instances hurtful.* On the other hand, it is supposed to have virtues which render it a useful remedy in epilepsy, at least according to the testimony of *Greding*.† Its success in hydrophobia, in spite of what has been said of it by *M. M. Muench*, of Hanover, and *Bucholtz*, of Weimar, *Alibert* thinks is very doubtful. The medical men of Germany, as we are

* See Alibert's Nouveaux Elémens de Thérapeutique, vol. i. p. 422. See also Murray's Appar. Med. vol. i. p. 648.

† See the same, p. 423.

told by Loiseleur Deslongchamps*, prescribe it with as much faith in hooping-cough (coqueluche) as we do bark in intermittent fever. The dose of the powder of the dry leaves of the belladona is from grs. viii. to xvi.; of an infusion made with a scruple or half a drachm of the dried leaves in ten ounces of boiling water, two ounces may be given daily; of the extract, or *succus spicatus*, the dose is from gr. i. to grs. v. or vi. *Orfila* places belladona amongst his poisons, and ascertained that it acted equally on dogs and men.† The berries, when eaten, are said to produce intoxication, accompanied with fits of laughter and violent gestures, great thirst, nausea, difficult deglutition, vertigo, dimness of sight, convulsions and death. Vauquelin‡ found the leaves to contain: 1. vegetable albumen; 2. a bitter narcotic principle; 3. nitrate, muriate, sulphate, binoxalate, and acetate of potassa. "Dr. Brandes has announced the existence of a new vegetable alkali in this plant, which he calls *atropia*; it forms brilliant acicular crystals, is tasteless, and difficultly soluble in water and alcohol‖," and affords distinct salts with the acids. Dr. Paris informs us, that the best antidote for belladona in an over dose is vinegar (Pharmacologia, p. 298.).

* They prepare a sirup by boiling ʒij. of the leaves, and ʒi. of root in a sufficient quantity of water, and adding a proper proportion of sugar: the dose from ʒi. to ʒiv. two or three times in the day. See Deslongchamps Manuel des Plantes Usuelles, vol. i. p. 395.

† See Traité des Poisons, vol. ii. part i. p. 239.

‡ See Annales de Chimie, lxxii.

‖ See Mr. Brande's Manual of Chemistry, vol. iii. p. 116.

CXXXVII.

NUTMEG. *Jādicāi* ஜாதிக்காய் (Tam.) *Jáéphal* (Hind.) *Jātiphala* जातिफल (Sans.) *Jáyaphala* (Beng.) *Jatipullum*, also *Sādikka* (Cyng.) *Jāphul* جاپهل (Duk.) *Jouz bewá* جوز بوا (Pers.) *Jowzalteib* جوزالطيب (Arab.) *Jāiphul* (Hindooie) *Buah-pala* (Mal.) *Woh-pala* (Jav.) *Bu-wah-pa* (Bali) *Jājikāia* (Tel.) *Gasori* (Ternat.) *Muskaat-noten* (Dut.) *Noz moscada* (Port.) *Noix muscade* (Fr.) *Muscatennusse* (Ger.) *Japhul* (Mah.) *Noce Moscada* (It.)

MYRISTICA MOSCHATA (Woodv.)

Cl. and Ord. Dicœcia Monadelphia. Nat. Ord. Lauri (Juss.) *Aechte Muscatennusse* (Nom. Triv. Willd.)

Nutmeg, which is the kernel of the fruit of the myristica moschata, has a fragrant agreeable spicy odour, and warm aromatic taste and unctuous feel; it is considered by the natives of India as one of their most valuable medicines in dyspeptic complaints, and in all cases requiring cardiacs, and corroborants; they likewise prescribe it to such puny children as appear to suffer much in weaning. The nutmeg tree is a native of the Molucca islands, but is principally cultivated at Banda, and of late years at Batavia, Sumatra, and Penang. There is an inferior and long-shaped kind of nutmeg, common on Borneo, and an export from Passier* to India, and there is a wild sort (*cāt jadicāi*), frequently to be met with in

* See Elmore's Directory to the Trade of the Indian Seas, p. 51.

some of the woods of Southern India, especially in Canara, which Dr. Buchanan thinks might be greatly improved by cultivation. The true nutmeg tree now grows to a tolerable size, in certain sheltered situations in the Tinnivelly district, especially at Courtalum, and bears pretty good fruit; it would also appear by Mr. Moon's valuable Catalogue of Ceylon Plants, to grow in that fine island, and has got the Cyngalese name of *sadikka*. Three other species of myristica grow in that country.

The cultivation of nutmegs was introduced into Sumatra, by the excellent Mr. J. Lumsdain's account, in 1798, as we learn by his valuable Memoir, published in 1821, in the Proceedings of the Agricultural Society of Sumatra: this attempt however, was not very successful; but it was tried again by Dr. Roxburgh, 1803, and with great success; that gentleman, carried with him no less than 20,000 vigorous nutmeg plants from Amboyna to Sumatra.

Nutmeg, like mace, taken in large quantity, is apt to produce stupor and drowsiness. Cullen cautions us against its use in subjects disposed to apoplexy, and Dr. Pearson thinks that in over-doses it has a narcotic effect, similar to that of camphor. Rumphius, who has given the scientific appellation of *nux myristica*, sive *pala*, to the nutmeg tree (Rumph. Amb. ii. p. 14. t. 4.) tells us, that the juice of the green nutmeg mixed with water, is used in Amboyna as a wash in apthous affections. Mr. Crawford, in his History of the Indian Archipelago, informs us, that there are no less than eight cultivated varieties of the tree in the Indian islands (vol. i. p. 505.), and according to *De Comyn**, two sorts grow in the

* See his State of the Philippine Islands, p. 26.

Philippine islands, one shaped like a pigeon's egg, the other perfectly spherical.

I perceive by Avicenna (148), that the Arabs, besides the Arabic name already mentioned, give nutmeg the appellation of bússabússa بسابسا. They place it amongst their *Mokewyat kabid* مقويات كبد (Hepatica), and *Mokewyat meoadeh* مقويات معدة (Tonica). The *volatile oil* of nutmeg, which possesses the odour and taste of the nutmeg, in a concentrated degree, is occasionally used as an external stimulant. The *expressed* oil, (which is improperly called *oil of mace*, and which Dr. Thomson conceives to be a kind of vegetable cerate, or a triple compound of fixed oil, volatile oil, and wax) is rarely prescribed, but as an external application; it is called in Tamool *jadiputrie-tylum*, and in Dukhanie *jawatrie-ka-tail* جوتري كاتيل; it is of a very stimulating nature, and is brought to India from Banda, where it is chiefly employed in preparing liniments for palsy and chronic rheumatism. The dose of nutmeg may be from three or four grains to a scruple, that of the volatile oil from two drops to eight. The nutmeg tree was unknown to Linnæus, and was first well described by Thunberg, in the Stockholm Acts for 1782. It is a large tree with erect *branches*, and a smooth ash-coloured *bark;* but the inner bark is red, *leaves* petioled, eliptical, pointed alternate, quite entire, shining, paler underneath, nerved, and have a delightful aromatic taste. The *flowers* are present at the same time with the fruit; they are minute, and without odour, and male and female are on the same and on separate trees. Willdenow, in speaking of the myristica moschata, says, *habitat in Moluccis;* but it will appear by the following passage, that it is also a native of America.

"Le muscadier, m'écrit Zea, se trouve dans les lieux "les plus chauds du royaume de la Nouvelle Gre- "nade, surtout à Mariguita, le long du grand fleuve "de la Magdeleine*;" and we know, that Ruiz and Pavon found it in Peru, and Swartz in the American islands. † By Beckman's account in his "Voyage to Borneo," the nutmeg tree grows in the island of Celebes, and is an export from Macasser.

Malao, bhanhahorac, bashi, and *barabee,* are the names of different wild nutmeg trees growing on Madagascar; an oil got from the fruit of the last is an excellent stomachic (See Copeland's History of Madagascar.).

CXXXVIII.

OIL OF ALMONDS. *Vādomcottay-yunnay* வாதுமகொட்டைஎண்ணை (Tam.) *Vadom vittilo* (Tel.) *Farsi bádām ka tail* فارسي بادام كاتيل (Duk.) *Inggudi tailam* इंगुदि तैलं (Sans.)

OLEUM AMYGDALI (Lond.

This is not prepared in any part of India, and its use there seems to be chiefly confined to the Mahometan practitioners, who recommend it for the same purposes that we do, as a demulcent and emollient in coughs and pulmonary complaints; it is, however,

* See Alibert's Nouveau Elémens de Thérapeutic, vol. ii. p. 219.

† See same work, vol. and page.

‡ The bitter almond is called in Hindooie, keruey badam; its root is considered as a medicine in Upper India. The wild almond is called in Hindooie *junglieka badam.*

but seldom seen in our Asiatic dominions. Almonds* are brought to India, of a very good quality, from the Persian gulph, and ports of the Red Sea. The dose of the oil is from ʒij. to ℥i. A mixture of ℥iv. of the oil, and eight drops of acetate of lead, is a good injection in gonorrhœa at the commencement.

CXXXIX.

OIL, CASTOR. *Síttámoonakayunnay*, also *Cottáy unnay* சித்தாமணக்குயணஉண (Tam.) *Endooroo tail* (Cyng.) *Oobali erundyka tail* اوبالي يرندي كاتيل (Duk.) *Sitt-āmindialoo noona* (Tel.) *Eranda tailam* एरंड तैलं (Sans.) *Dúhn ul kherooa* دهن الخروع (Arab.) *Rowgen Bēdangeer* روغن بيد انجير (Pers.) *Miniak jarak* (Mal.) *Lenga jarak* (Jav.) *Langis jarak* (Bali.) *Huile de ricin* (Fr.) *Rizinus korner* (Ger.) *Olio di ricino* (It.)

OLEUM RICINI (Lond.)

This most valuable oil is prepared from the seeds of the ricinus communis, fruct. minor (Lin.), a plant of the cl. and ord. Monoecia Monadelphia, and nat. ord. Tricoccæ (Lin.). The trivial German name of which, according to Willdenow, is gemeiner wanderbaum.

The oil is highly prized as a purgative medicine by the native practitioners of India, who conceive it

* Laureiro informs us, in his Flora Cochin-China (vol. ii. p.316.), that both the sweet and bitter almonds grow in China, but he is doubtful if they grow in Cochin-China; where, however, the tree amyg. com. is called *him-ho-gin*, the *amyg. Persica* (Peach) grows in Japan, and is there called *momu*, also *too*.

to be particularly indicated in cases of *neercuttoo* (Tam.) *ischuria* and *valacuttoo* (Tam.), obstinate costiveness, from its operating freely and without irritating; it is usually given daily, in small quantities, to new-born children, for three weeks together; and is also considered as an invaluable medicine as an external application in various cutaneous affections.

The castor-oil plant*, from the seeds of which the oil is made, grows in great abundance in almost every part of India; on the Malabar coast it is called by the Portugese *figueiro d'inferno*, in Sanscrit it is *eranda* एरंड in Canarese *haralu*, in Malayalie *citavanacu*, in Hindoostanie *arend*, in Arabic *kherwa*, in Persian *beedinjeer*, in Bengalie *bherenda*, and in Sumatran *jarak*, which, according to Rumphius†, is also Malay. That distinguished writer speaks of the plant under the scientific appellation of ricinus albus, and informs us, that in Ternate it is termed *palatsgayt*, in Banda *cajuloluy*, and in Amboyna *camiri*; it is the avanacu of Rheede (Hort. Malab. ii. p. 57. t. 53.). Marsden, in his History of Sumatra, says, the plant‡ is common there (p. 92.).

The capsule is a trilocular nut, about the size of a large marble, of a pale-green colour, and covered with flexible prickles; this, on bursting, elastically expels the seeds, usually three in number; they are

* Dierbach in his Materia Medica of Hippocrates informs us (chap. v.), that the plant was known to Hippocrates under the name Κροτον and the Germans call it familiarly *wunderbaum*.

† See Rumph. Amb. iv. p. 92.

‡ Dr. F. Hamilton in his admirable account (MSS.) of the Puraniya country, informs us, that he found the *ricinus* cultivated in that district for the purpose of feeding a worm which produces a kind of coarse silk; which worm, I am told by my friend Mr. Wilkins, in spinning the cocoon, leaves an aperture at one end, through which it can force its way out, without injuring the fibre: this is not the case with the common worm.

almost quite white, of an oblong, flat figure, and heavy mawkish taste. The plant itself grows fast, and often to the height of fourteen or fifteen feet, with a round, thick jointed, furrowed stem, glaucous in the lower part, but of a purplish colour towards the top; the leaves grow singly on very long foot-stalks, they are large, peltate, palmate, from eight to twelve parted, or in other words, deeply divided into eight or more pointed serrated lobes, of a blueish-green colour; the flowers are in terminating racemes, the *male* below, with a five-parted calyx, the *female* at the upper part of the spike, and is composed of a three-cleft reddish calyx. The plant is the *jima* and *too goma* of the Japanese, and the *cay-du-du-deau* of Cochin-China.*

The oil is obtained in two ways, either by expression or coction: in the second mode it is apt, occasionally, to become a little rancid, though it (so prepared) looks clearer, having the colour of beautiful pure amber, and is almost without smell, or disagreeable taste. Dr. Thomson informs us, that castor-oil is distinguished from all other expressed oils, by being nearly completely soluble in sulphuric acid.

The bark of the root of the tree is a powerful purgative, and when made into a ball about the size of a lime, in conjunction with chillies and tobacco leaves, is an excellent remedy for gripes in horses.

In the Mysore country, where the castor-oil plant is much cultivated, two varieties are distinguished: our present article, which is the ricinus communis, *fruct. minor*, and which is in Canarese *chicca hárálú;*

* Laureiro speaks highly of the virtues of the oil as a purgative, anthelmintic, &c., see his Flor. Cochin-China, vol. ii. p. 584.

and the larger sort, which is the ricinus communis *fruct. major*, and which in Canarese is *dōdú hárálú.*

Well prepared castor-oil* is, as already mentioned, mildly cathartic, and is much used by the European medical practitioners in India in dysenteric affections, in doses of from ʒvi. to ʒi. In obstinate constipation, an *enema* prepared with two ounces or more of this medicine, the due proportion of warm water, and a little common salt, or Glauber salt, seldom fails to give relief. Castor-oil is best taken in weak pepper water (malagatanie). Below† is the process for making this oil, commonly adopted in the Southern provinces of India.

The castor-oil plant is now much cultivated in the West Indies, and the oil has of late years become an export from Jamaica, of a superior quality; in that island it is considered as a valuable external remedy in cramps, and pains arising from colds, &c. Long, in his History of Jamaica, gives a particular account of it (p. 712.).

The physicians on the continent of Europe, particularly Messrs. Odier and Dunant, of Geneva, have found it efficacious in tape-worm (tænia).

* Castor-oil is strongly recommended by a French writer, Sainte Marie, in colica pictonum. See Roque's Phytographie Medicale, vol. ii. p. 286.

† Take five seers of the small castor-oil nuts, and soak them for one night in cold water; next morning strain this water off and throw it away, and put the nuts into a second quantity of fresh water, and boil them in it for two hours; after which strain the water off and throw it away, as in the first instance: the nuts are then to be dried in the sun on a mat for three days; at the end of which time, they are to be well bruised in a mortar: add to the nuts thus bruised ten measures of water, and set the whole on the fire to boil, taking care to keep continually stirring the contents of the pot, until all the oil appears at the top; when it is to be carefully strained off and bottled for use. The quantity of nuts mentioned in this formula, ought to yield about one quart bottle of oil.

Alibert gave it with success in many cases of *lumbricus teres*, "Nouveaux Elémens de Thérapeutique" (vol. i. pp. 376, 377.).

What is called in the Southern districts of India *lamp-oil*, from its being chiefly used for burning, is termed in Tamool *vúllúkyúnnay*, and in Tellingoo *ámídum*; it differs from the castor-oil, in having a more unpleasant odour, with a considerable degree of empyreuma owing, no doubt, to the seeds being roasted previously to the operation of boiling for the purpose of extracting the oil; it is, besides, of a darker colour, and altogether of a more gross nature. This oil is got from the nut of the ricinus communis, *fruct. major*, and which I believe is the *ricinus viridis* of Willdenow (Spec. Plant. vol. iv. p. 564.). It is the r. ruber of Rumph. (Amb. iv. p. 97. t. 41.), the *pandi-avanacu* of Rheede (Mal. ii. p. 60.), and differs from the other species in the greater size of the stalks, leaves and fruit. The ricinus communis, with two other species, the *mappa* and *dicoccus* (both natives of Amboyna), are growing in the botanical garden of Calcutta; the two last introduced by Mr. C. Smith, in 1798.

Castor-oil, boiled in nitric acid, is converted into a sort of wax, which, however, Mr. Brande says, he found to be too easily melted to be used for making candles. Castor-oil is completely soluble in alcohol and ether.

CXL.

OIL OF CLOVES. *Kirāmboo tāylum* கிராம்பு தைலம் (Tam.) *Lawingha tylum* (Tel.) *Woo-*

rala tail (Cyng.) *Lōung ka tail* لونگ کا تیل (Duk.) *Huile de girofle* (Fr.) *Oleo de garafano* (It.) *Lounga-tcha-tile* (Mah.)

OLEUM CARYOPHILLI.

The oil of cloves is chiefly prepared by the Dutch at Amboyna, at least that which is usually found in India; it is of a deep red colour, having the flavour of the clove, but comparatively milder; it is, however, in its effects, powerfully stimulating, and, on that account, is seldom used internally, except as a corrigent to griping extracts; externally, it has been found to relieve the toothache. The specific gravity of oil of cloves is, according to Brande, 1.034. This, like the other volatile oils, absorbs oxygen when long exposed to it, and becomes thick and resinous. From one hundred weight of cloves may be obtained from eighteen to twenty pounds of the essential oil. See article Clove.

CXLI.

OIL, KĀNARI (Malay.).

I should not have given this oil a place here, as it undoubtedly hitherto has not been considered as one of the articles of the British Materia Medica; but on finding it so highly spoken of by Mr. Crawford, in his admirable "History of the Eastern Archipelago," I have been tempted to notice it, and at the same time to express a regret, that he was not able to add the botanical name of the tree from which it is obtained. I cannot do better than give that gentle-

man's own words: "Of all the productions of the Archipelago, the one which affords the finest edible oil is the *kanari*. This is a large handsome tree, which yields a nut of an oblong shape of nearly the size of a walnut. The kernel is as delicate as that of a filbert, and abounds in oil; it is one of the most useful trees where it grows. The nuts are either smoked and dried for use, or the oil is expressed from them in their recent state. The oil is used for culinary purposes, and is more palatable and finer than that of the cocoa-nut; the kernels, mixed up with a little sago meal, are made into cakes and eaten as bread. The *kanari* is a native of the same country as the sago tree, and is not found to the Westward. Into Celebes and Java it has been introduced in modern times, through the medium of traffic."

CXLII.

OIL KŸÁPOOTIE or CÁJUPUTE. *Kayyāpooti tayilam* கயாபூதி தயிலம் (Tam.) *Kŷápootie ka tail* كايابوتي كا تيل (Duk.) *Cajuputa* (Mah.) *Kāyū pūtieh* كايو پوتة (Mal.)

MELALEUCA CAJUPUTI (Maton.)

Cl. and Ord. Polyadelphia Icosandria. Nat. Ord. Hesperidæ (Lin.) *Weisstammiger Cajaputbaum* (Nom. Triv. Willd.)

The tree which yields this oil was long supposed to be the melaleuca leucodendron (Smith Soc. Lond. iii. p. 274.), but as specimens of the plant which really does yield it, on being sent home by Mr.

Christopher Smith, differed from the m. leucodendron*, and agreed with the arbor alba minor of Rumphius (Amb. ii. p. 72. t. 16.); Drs. Maton and Smith have fixed it as a new species, under the name of m. cajuputi. We are told by Mr. Crawford, in his "History of the Indian Archipelago," that there are three varieties of this tree, which is a native of Amboyna, Java, and Borneo; but that "the two largest only afford substances for economical† purposes: the bark of the largest of these yields the material with which the native ships of the Moluccas are caulked; and from the leaf of the smaller, by distillation, the fragrant essential oil which has been used for medical purposes; sometimes internally, as a powerful sudorific, but more frequently externally, as a useful embrocation, under the ignorant and corrupt denomination of cajeput."

This valuable volatile oil is distilled from leaves, which had been previously infused in water, and left to ferment for a night. Rumphius informs us, that when newly drawn it is limpid, pellucid and volatile, and smells strongly of cardamoms, but is more pleasant. Dr. Thomson has well described it, as it is brought to Europe, comparing its powerful odour to a mixture of oil of turpentine and camphor; it is limpid, transparent, and commonly of a blueish-green colour.

Mr. Crawford, in speaking of the gajeput trees, says, that "they are gigantic myrtles." The largest sort is a mountain tree, and grows in extensive

* Laureiro has fully described the mel. leuc. in his Flora Cochin-China (vol. ii. p. 468.), and speaks of the virtues of the leaves. "Roborans stomachicæ diureticæ et emenagoga, &c. &c." adding, "valet in obstructione hepatis," the tree itself is the *cay tlam* of the Cochin-Chinese.

† See the work, vol. i. p. 513.

continuous forests; the smaller (which yields our article), thrives near the sea-coast; it has got its name from its colour, *kāyu-puti*, which signifies *white wood*, and hence its appellation, as given to it by Rumphius, *arbor alba*; besides its current name, it is known in Malay countries under other terms: such as *galam*, *daun*, *kitsjil*, &c.; in Ternate by that of *bajule*; in Amboyna by the various appellations of *kilam*, *ilan*, and *elan*; and in *Ceram* by that of *sakelan*. It is a smallish tree, with alternate, lanceolate leaves, on short petioles; and flowers which are white, sessile, and accompanied with minute ovate bractes.

Kyapootie oil is hitherto but little known to the native practitioners of India; it is in use, however, amongst the European medical men of that country, who recommend it, when mixed with an equal quantity of some mild oil, as an excellent external application in chronic rheumatism. The Malays are in the habit of prescribing it internally, and I understand with great success, in what they call *peetamboobie*, and *loompoo* (epilepsy and palsy). It is, no doubt, a highly diffusible stimulant, antispasmodic, and diaphoretic, and may be efficaciously given in dropsy, chronic rheumatism, palsy, hysteria, and flatulent colic; the dose from two to six or seven drops, on a lump of sugar. On the continent of Europe, according to Virey*, this volatile oil is considered as carminative, cephalic, and emmenagogue, and its smell, it is supposed, keeps off insects from collections of natural history; it may be further added respecting it, that it dissolves *caoutchouc* or Indian rubber; by which means a good varnish may be made.

* See his Histoire Naturelle des Médicamens, p. 264.

CXLIII.

OIL OF MACE. *Jādipútrie tÿlum* ஜாதிபத்ரி தைலம் (Tam.) *Wassa wasitali* (Cyng.) *Jawatrie ka tail* جوتري کا تيل (Duk.)

OLEUM, OLEUM MACIS EXPRESSUM DICTUM.

What is commonly called *oil of mace* is, in fact, an *expressed oil, obtained from the nutmeg;* there are two sorts: one a soft sebaceous kind of substance, of a yellowish colour, sub-aromatic odour, and having a somewhat fatty, pungent, and bitterish taste; it is made at Banda, and is little used, except as an external application in palsy and chronic rheumatism. The other sort is usually brought from Holland, in flat square cakes, and is sometimes called in commerce *Banda soap;* it is weaker in smell, and fainter in colour than the first mentioned, which leads us to believe that it is sophisticated. See article Mace.

CXLIV.

OIL OF NUTMEG. *Jādikāi tylum* ஜாதிக்காய் தைலம் (Tam.) *Jāphul ka tail* جايهل کا تيل (Duk.) *Jatipullum tail* (Cyng.)

OLEUM NUCIS MOSCHATÆ.

By this is meant the volatile oil of nutmeg; the expressed oil is usually, but improperly, called *oil of mace.* The essential or volatile oil, is prepared by the Dutch at Banda, and is, when properly made, of

a pale straw colour, limpid and transparent, and possesses, in a considerable degree, the odour of the nutmeg. (See article Nutmeg.) In doses of two or six drops, it is sometimes given as a stimulant; but it is oftener had recourse to as an external application in sprains and chronic rheumatism.

The specific gravity of oil of nutmeg, according to Brande, is 948. See article Nutmeg.

CXLV.

OIL OF MUSTARD SEED. *Kádághoo-yunnay* கடுகெண்ணை (Tam.) *Rāián ka tail* رایان کا تیل (Duk.) *Avala nooney* (Tel.) *Sarshapa-tailam* सर्षपतेलं (Sans.)

OLEUM SINAPEOS.

An expressed oil, prepared from the seeds of different species of sinapis is used in the Northern parts of Hindoostan, and in many parts of Malabar, for culinary purposes, in the same way that butter or ghee is on the Coromandel coast; it is reckoned extremely wholesome by the natives, being at once gently stimulating and nourishing. The various species cultivated in the Bengal provinces, for the purpose of making this edible oil, are the *surson* (sinapis dichotoma, Roxb.), the *rāi* (sinapis ramosa Roxb.), and the *toree*, which is in Sanscrit *tuverica;* all these in respect to medicinal qualities, correspond exactly with the sinapis nigra of Willdenow, and may be used as such, either internally or externally.

The specific gravity of oil of mustard seed, is a little below that of water; it is insoluble in water,

but forms an emulsion by the aid of mucilage: it is partially soluble in alcohol and ether.

CXLVI.

OIL, ROCK, or PETROLEUM. *Mun tylum* மணதயலம (Tam.) *Muttie ka tail* مٹي کا تیل (Duk.) *Neft* نفط (Arab.) *Minnia-tanna* (Mal.) *Bhūmi-tailam* भूमितैलं (Sans.) *Ippoo* (Sumat.) *Kesosa no abra* (Japan.)

For an account of this mineral oil, the reader is referred to the article Bitumen, in this Part and Chapter of the work.

CXLVII.

OLIBANUM. *Páringhi sámbrāni* பறஙகிசாமபறணி (Tam.) *Avul coondoor* اول کندر (Duk.) *Looban* لوبان (Arab.) *Koondir zúchir* کندر ذکر (Hind.) *Looban* (Mal.) *Encens* (Fr.) *Weirauch* (Ger.) *Olibano* (Ital.) *Labúniyá* (Syr.)

BOSWELLIA SERRATA (Roxb.)
LIBANUS THURIFERA (Colebrooke.)

Cl. and Ord. Decandria Monogynia (Lin.)

It will be seen, by referring back to the article Frankincense, how much the real olibanum differs from a substance sometimes mistaken for it, commonly called *coondoor* by the Mahometans of Lower India, and *koondricum* by the Tamools; and which may be met with in almost every bazar. The gum-resin now under consideration, on being shown to a

Hakeem, is immediately termed either *looban* or *avul coondoor*, which last signifies *first sort of coondoor*. It appears to be very scarce in the interior of India, though I perceive by Elmore's "*Guide to the Trade of India*" (p. 129.), that it is amongst the exports from Bombay to China. Good olibanum, is in semitransparent tears, of a pink-colour, brittle, and adhesive when warm, when burnt the odour is very agreeable, its taste is bitterish, and somewhat pungent and aromatic; it flames with a steady clear light which is not easily extinguished, and which seems to me to be a peculiarity, which has not been hitherto sufficiently inquired into: it burns for a long time, leaving behind a *black ash*, not a whitish, as has been said. Till lately much uncertainty seemed to have been entertained respecting the plant which actually produced the olibanum; Dr. Thomson in his London Dispensatory, observes, "It was supposed on the authority of Linnæus, to be the production of the bark of the Juniperus Lycea," but Woodville was not satisfied that it was procured from that plant; and Mr. Colebrooke very properly remarked, that it was by no means probable that it could ever be obtained from it; as it was well known to be a native of the South of France; and moreover, that the French botanist denied that it yielded the gum-resin in question: subsequent investigation by that gentleman has fully ascertained that the olibanum of the shops is the actual produce of the *libanus thurifera*, a truth which the reader may satisfy himself of, by a perusal of Mr. H. T. Colebrooke's excellent paper on the subject in the Asiatic Researches, vol. ix. p. 377. Indian edition, to which is affixed a botanical description of the tree, by Dr. Roxburgh.

The boswellia serrata (Roxb.), or rather the liba-

nus thurifera, as it has been named by Mr. Colebrooke, is a native of the mountainous tracts of Central India; its Sanscrit name is *sallaci*, in Hindoostanie it is called *sálāi;* it is a large tree, with the foliage crowded at the extremities of the branches, the leaves are impari-pinnate, consisting of ten pairs of leaflets, each an inch or an inch and a half in length, obliquely ovate, obtuse, serrate, and villous, supported by round downy petioles; the flowers are numerous, small, and of a white colour, accompanied with minute bracteas; the capsule is smooth, three-sided, trilocular, three-celled, and three-valved, each cell containing one perfect seed only, which is broad, cordate, and winged.

I perceive by Dr. F. Hamilton's valuable MSS. (account of the *Shahabad* country), that the libanus thurifera is there very common, and its resin called *sale-gond*, or *sale-lassa;* but, strange to say, it is not applied to any use; at Chandalgar, however, where it is termed *biroza*, it is employed as a medicine. When collected, Dr. Hamilton adds, as it flows from the tree, it is of the consistence of turpentine, but of a clear greenish colour; and Mr. Turnbul, surgeon of Chandalgar, assured him, that in this state it is named *gandah birosa;* in its dry state the resin is called *sukka birosa*, and this it is that is sold in England, as Mr. Colebrooke has mentioned, as olibanum. Dr. Hamilton, notwithstanding, seems to be of opinion, that though a kind of olibanum may be procured from the lib. thurifera (Col.), what of the article is commonly taken to England under the name of olibanum, is the produce of an *amyris*, or at least of a thorny bush; and this, he is the more disposed to think, as he cannot learn that the resin of the *sale* was ever used by the Hindoos as an incense.

It has been observed by Geoffroy, that olibanum is produced only in *Arabia Sabæa*; while others have alleged, that it comes from Ethiopia. The Arabians have two names for it, *looban*, and *condur*; the first, taken in all probability from the Hebrew word *levonah*; the second is most in use; though I am inclined to think, that it is more properly applied to frankincense. We are informed by D'Herbelot*, that olibanum is found in abundance in Arabia Fœlix, particularly near the city of *Merbath*, and we know from Niebhur (Travels in Arabia, vol. i. p. 99.), that it is an export from Mocha, as is also noticed by Mr. Milburn in his "Oriental Commerce," (vol. i.p. 99.)

Olibanum is now rarely used in European medical practice; it is certainly in its nature stimulant and diaphoretic, and used formerly to be administered in affections of the chest, and externally as a vulnerary: on the continent it is by some considered as possessing a degree of astringency, and ordered in fluxes. Virey† in his "*Histoire Naturelle des Médicamens*," mentions it as being yielded by the amyris kataf of Forskahl (descrip. 80.), (so thought Lamark),‡ and usefully employed, "comme parfum est en fumigations, pour purifier l'air malsain:" the same author (Virey) tells us, that the resinous bark of the tree is called *narcapte*, also *thymiama*, but where, or in what language, he does not add. The Arabians place olibanum amongst their *Tonics* مقويات

* See Bibliotheque Orientale, p. 527.

† See his work, p. 290.

‡ On turning to Forskahl, I perceive he says of the *amyris kataf*: "Arbor ligno albo, rami inermes, folia obtusa et acuta; flores vidi tantum masculos, majores floribus opobalsami cæterum similes." The Arabians call the tree قطف. "Et narrant Arabes, arborem intumescere et pregnantem evadere *pulvere* rubro, fragranti, quo fœminæ regionis *Abu-Arisch* capita aspergere vel lavare solent." Forsk. Descrip. Plant. cent. iii. p. 80.

معدہ and *Cardiacs* مقویات دل. The reader may find it fully treated of in an Arabic work تذکري تسويدي وحاوي صغير in two vols. by Ishāk and Hafiz Mohammed. Olibanum appears to consist, according to Thomson, of resin, gum, and a volatile oil, and this is confirmed by late experiments by Braconnot; who found in 100 parts of it, 8 of volatile oil; 56 of resin; 30 of gum; and 5·2 of a matter resembling gum, but not soluble in water and alcohol.

Another species of boswellia, the b. glabra (Roxb. Cor. Pl. vol. iii. p. 4.), is a tree of great value in India; it is a native of the highest mountains of the Circars: the wood is heavy, hard and durable, and is used for ship-building. From wounds made in the bark, a resin exudes, called in Tellingoo *gúgúl* (the tree *gúgúla-tschittoo*); this resin mixed and boiled up with a certain portion of some low-priced oil, is used as a pitch for the bottoms of ships. On the Balla-Ghaut mountains another species is common, the *canarium odoriferum hirsutum*. (Rumph. Amb. 2. t. 51.)

CXLVIII.

OLIVE. *Zietoon* زيتون (Arab.) *Julpaïy* (Hindooie.) *Oliva* (It.) *Olive* (Fr.) بوه منيث *Booaminyak* (Mal.)

OLEA EUROPÆA.

Cl. and Ord. Diandria Monogynia. Nat. Ord. Sepiariæ. *Gemeiner Oelbaum* (Nom. Triv. Willd.).

The olive tree is not cultivated in India, nor would it thrive there. In the Northern parts of Persia it is often met with, and in Syria; but Italy, France, Spain, and North Africa, are the chief countries in

which it grows to commercial advantage. Pliny ranked the olive tree as next in virtue to the vine. See Nat. Hist. lib. xxiii. chap. iii. The Arabians, according to Avicenna, put a high value on the leaves of the wild olive as a vulnerary; the oil, which they term زيت, they occasionally employ as we do in preparing laxative enemas. Vide Canon. Med. lib. ii. tract.

CXLIX.

ONION. *Venggāyum* (Tam.) *Lòono* (Cyng.) *Peeaj* (Hind.) *Bússúl* بصل (Arab.) *Peeāz* پیاز (Pers.) *Pee-aj* (Hindooie) *Peeāz* پیاز (Duk.) *Bavangmira* (Mal.) *Woolligudda* (Tel.) *Palāndu* पलाण्डु also *Latārka* लताकि and *Sukandaka* सुकन्दक (Sans.) *Kembally* (Can.) *Brangbang* (Jav.) *Bawung* (Bali) *Ognon* (Fr.) *Swiebel* (Ger.) *Cipella* (It.)

ALLIUM CEPA (Lin.)

Cl. and Ord. Hexandria Monogynia. Nat. Ord. Spathaceæ (Lin.)

This valuable plant grows in great abundance all over India. Bombay onions are of a particular fine quality, being large, and singularly mild and delicately flavoured; cut into thin slices, and eaten with bread and butter, they are truly excellent; boiled, they are one of the best of all the Indian pot vegetables.

Onions are prescribed by the native doctors internally, in conjunction with other articles, in cases of

* Abel, in his "Journey to China," informs us, that a very good edible oil is obtained from the seeds of the camellia oleifera. See work, p. 175.

bleeding piles; they are also employed externally, when boiled and made into a kind of poultice with certain herbs, to hasten suppuration; if, on the contrary, they are applied raw, the *Vytians* suppose them to have a repellent quality. Dr. Thomson says, that "as food, the onion is said to produce flatulency, and to occasion thirst; as a medicine, it is stimulant, diuretic, and expectorant." The Greeks called the onion Κρομυον; the Romans *cepa*, also *unio;* the first, it is conjectured, from the word caput, owing to the largeness of the head; the second from the circumstance of its being a single root, without offsets.* The onion was reckoned by the Egyptians amongst their divinities, and many of the ancients have written on it: such as Theophrastus, Palladius, Pliny, and Celsus; the latter writer is of opinion, that both garlic and onions produce flatulence, and heat the body; he observes, however, in other parts (lib. ii. cap. xxix. xxxi. and xxxii.), that they are laxative, diuretic, and have the effect of quickening the senses. Pliny ascribed to them the power of clearing the sight, and recommended them for pains in the loins, bites of serpents, dropsies†, &c., but thought that they might do mischief in cases where all was not right about the præcordia. Asclepiades‡, on the other hand, was of opinion, "ad calorem quoque validum profici hoc cibo, et si jejuni quotidie edant, firmitatem valetudinis custodire; stomacho utilia esse, spiritus agitatione."‖ See article Garlic in this Part and Chapter. The leek (allium porrum)

* See Mr. Phillips's History of Cultivated Vegetables, vol. ii. p. 15.

† See Pliny's Natural History, lib. xx. cap. v. p. 606.

‡ See the same.

‖ An opinion, in which Roques in his valuable Phytographie Médicale altogether agrees. See vol. i. p. 111.

is but little known to the natives of India; it is stimulant and diuretic. The expressed juice has sometimes been given with advantage in dropsies, in doses of from ʒss. to ʒij. in syrup.

The allium cepa grows in Japan, there called *Soo*, also *Fitomosi* (Flor. Japon. p. 132.): it is also cultivated in Cochin-China, where it is termed *cay-hank;* its many virtues are noticed by Laureiro; pectoral, diaphoretic and diuretic. (Vide Flor. Cochin-Chin. vol. i. p. 202.)

CL.

OPIUM. *Apini* ஆபினி (Tam. and Tel.) *Afeem* افیم (Duk.) *Ufyoon* افیون (Arab. and Mal.) *Chasa* * also *Apaynum* (Sans.) *Sheerikhaskash* شیرخشخاش (Pers.) *Abim* (Cyng.) *Ufeem* (Hindooie) *Apium* (Jav.) *Hapium* (Bali) *Caruppa* (Mal.) *Opium* (Fr.) *Mohnsaft* (Ger.) *Madjoon* (Turk.) OPIUM (Edin.)

Opium is well known to be an inspissated juice, obtained by incisions made in the capsules of the white poppy, which is a native of Asia, though now cultivated in many parts of Europe. It is only, however, in India, Persia, and Turkey, that opium is prepared, and of late years in small quantities at the island of Celebes, and in Penang. The Indian opium is inferior to none: Dr. Thomson seems to think, that it has less of a peculiar, heavy, narcotic odour than the Turkey article, is somewhat less compact in texture, and of a darker hue; but that it agrees with it in other sensible qualities.

* This is more properly the Sanscrit name of the poppy plant; but, for either, it is not given with much confidence.

The opium of Hindoostan is chiefly furnished in the provinces of Bihar and Benares, where the plant is called *post;* and is sold in Calcutta by public sale. A learned and ingenious inquirer, Dr. Keir, estimated the produce of one acre at sixty pounds of opium, but Mr. Colebrooke* thinks he must have made a mistake, and over-rated the quantity. The India opium Dr. Paris thinks inferior to the Turkey, being less compact, softer, darker in colour, and fainter in odour; and Dr. Thomson found the Turkey opium to contain three times more morphia.

The native practitioners of India use opium for the same purposes that we do; with this exception, that they conceive it to be particularly injurious in typhus fever. The *Vytians* administer it to procure sleep, shorten the cold fit of an intermittent fever, also in lock-jaw, and to afford ease in certain stages of dysentery. They likewise recommend it externally, when mixed with arrack, and in conjunction with benzoin, bdellium, aloes, and ginger in rheumatic affections; but they at the same time, at least the most intelligent of them, maintain, that opium, though it may often alleviate distressing symptoms, cures few or no diseases, and but too often, by giving temporary relief, conceals deep-seated mischief.

Opium, in moderate doses, increases the fulness of the pulse, and augments the heat of the body; also invigorates both the corporeal and mental functions, exhilirating even to intoxication; these are, however, soon followed by languor, lassitude, and sleep. In large doses, Dr. Thomson† observes, the

* See Remarks on the Husbandry of Bengal, p. 117.

† See London Dispensatory, article Opium; the reader may also consult Réflexions Médicales sur les Effets sensibles de L'opium, par Philibert: Joseph Roux, who seems to be of opinion that opium is at once stimulant and sedative.

primary excitement is scarcely observed, but the pulse seems at once diminished — stupor quickly ensues, followed by delirium, sighing, deep and stertorious breathing, cold sweats, convulsions, apoplexy, and death.

For excellent accounts of the uses and abuses of this extraordinary extract, the reader is referred to Dr. R. Pearson's work entitled Practical Synopsis of the Materia Medica; to Chevalier Roque's valuable publication, entitled Phytographie Medicale, vol. ii. p. 58.; and to Dr. Thomson's London Dispensatory; from the last of which I cannot resist copying the following passage.

"Opium, for exhilarating the spirits, has long been employed in Turkey, Syria, and China, (he might have added the Malay countries,) and it has of late years been unfortunately adopted by many, *particularly females*, in this country: its habitual use cannot be too much reprobated, as it impairs the digestive organs, consequently the vigour of the whole body, and gradually destroys the mental energies." Opium is efficaciously given in some diseases of debility, such as in typhus fever. It produces constipation, and is hurtful where there is a disposition to local inflammation, or to visceral obstruction, and in what is called ardent * remittent fever, it is a positive poison.† It checks intermittent fever, given a little before the approach of the pa-

* Fever attended with great heat of skin. See Dr. James Smith on the fevers of Jamaica.

† Marcet, in his Memoir on the Action of Poisons on Vegetable Substances, would appear to maintain, that vegetable poisons act on vegetables as they do on man, viz. on the nervous system; and he thinks it probable, that there does exist in vegetables a system of organs which is affected by the poisons nearly as the nervous system of animals is. See Journal of Science, Literature, and the Arts, No. xxxix. p. 195.

roxysm. In acute rheumatism it is only safely given in conjunction with ipecacuanha or antimonials. In *hæmorrhagiæ* it is useful when the discharge arises chiefly from an increased degree of irritability. In the latter stages of catarrhal complaints opium may be given with advantage; but, in dysentery, never when the bowels have not been previously evacuated, and inflammatory symptoms mitigated. "It is in spasmodic attacks, such as tetanus, epilepsy, and cholera, that the good effects of opium are most evident. A quarter of a grain frequently repeated, is enough to keep up its stimulant effect; and from gr. j. to gr. ij. act as a narcotic, and produce sleep; while in tetanus or hydrophobia, and some other diseases, ʒvss. of laudanum have sometimes been given in twenty-four hours, without occasioning any bad effects or bringing on sleep." In violent pain from ophthalmia a solution of opium as an eye-wash affords immediate relief.

Should the reader be desirous of any information regarding those medicines which might be substituted for opium, he may consult Loiseleur Deslongchamps' valuable work, entitled "Manuel des Plantes Usuelles Indigenes" (vol. ii. fourth Memoir, from p.81. to the end of the volume). The safest would appear to be that obtained from the lactuca virosa, which was known to Pliny, Celsus, Galen, and Dioscorides; (Vide Plin. lib. xix. cap. viii.) the dose from gr. ij. to gr. xviii. of the extract, according to circumstances; he also mentions (I mean Deslongchamps) the datura stramonium as a substitute. The soporific virtues of henbane are noticed in the same chapter. Those of the lactuca sativa are well known. Gray, in his supplement to the Pharmacopœias, informs us, that the hypecoum pendulum yields a

narcotic juice resembling opium. It would appear, by a paper lately published by Mr. J. Murray, in Brewster's Philosophical Journal (No. 4.), that the acetic acid is a perfect counter poison for opium.

The substance to which the narcotic power of opium is referable has been examined with much attention by Mr. Serteurner, who has given it the name of *morphia*. It would appear in some respects to possess the properties of an alkali; it reddens turmeric, and forms crystallizable compounds with acids*; Magendie found morphia to be soluble in olive oil, and that the compound acted with great intensity.

The poppy plant, *papaver somniferum*, is of the class and order polyandria monogynia, and nat. ord. rnoedææ (Lin.). It is called *cassa cassa* in Tamool, *khashkhash* خشخاش (Arab. and Duk.) *Kooknar* کوکنار (Pers.) *Post* (Hind.) It is the *jeisoku*, also the *kes* of the Japanese (Flor. Jap. p. 222.); and is what Homer speaks of under the name of Μηκων: it is the *garten-mohn* of the Germans; the *mak* of the Bohemians and Hungarians, and the *maczek* of the Poles; the Cyngalese term it *albin atta*; on the capsule, with its contents, the Tamools have bestowed the name of *póstákāi*; in Dukhanie it is پوست *Poost*. The poppy is an annual plant, with a glaucous coloured stem, smooth, erect, and round,

* I perceive, however, by Chevalier Roque's Phytographie Médicale, vol. ii. p. 140., that late experiments, made by M. *Robiquet*, have brought the analysis of opium to very great perfection; that gentleman says, opium contains: "de l'huile fixé, du caoutchouc, une substance vegeto-animale, du mucilage, de la fécule, de la résine, des débris de fibres végétales, de la narcotine, de l'acide méconique, un acide nouveau découvert par M. Robiquet, et un substance jouïssant des mêmes proprietés que les alcalis, designée sous nom de *morphine*." See Formulæ at the end of this volume.

seldom rising higher than five feet, with large, simple, obtuse, lobed and crenated leaves, embracing the stem, on which they are alternately placed; and flowers which are large, terminal, of a silver-grey, and tinged with violet at the base.

The Arabian and Persian physicians * place opium amongst their *Mokederrat* مخدرات (Narcotica). For much curious information respecting it amongst the ancients,† the reader may consult Pliny's Natural History: that writer tells us (lib. xx. cap. xviii. p. 652.); that the seed of the white poppy is a cure for elephantiasis; he also informs us how opium was prepared in his day, and dwells on its pernicious effects, "non vi soporifera modo, verum si copiosor hauriatur, etiam mortifera per somnum." Some of the contemporary authors, it is true, approved of it when used cautiously; its greatest enemies were *Diagorus* and *Erasistratus*, who condemned it. "*Diagorus et Erasistratus in totum damnavere, ut mortiferum;*" and Andreas, as is quoted by Mr. Phillips in his History of Cultivated Vegetables, (vol. ii. p. 61.), was of opinion, that if it were not adulterated by the people of Alexandria, it would cause blindness. The remedy on which the ancients seem to have had most reliance in cases of poisoning from opium was the *artemisia*: "Bibitur et hæc ex vino adversus opium." Pliny, lib. xxv. cap. x.

* In the writings of Rhazes, a celebrated Persian physician, who published towards the end of the ninth century, I can find little more regarding opium than a theriaca, which he recommends to be taken to mitigate its bad effects, when used incautiously. Vide Oper. Raz. de Re Med. lib. i. p. 198. Avicenna, however, thought better of it: "Importunæ tussi medetur, dysenteriæ remedium est accomodatum est." Canon. Med. lib ii. tract. ii. p. 51.

† In speaking of the use of opium amongst the ancients, Murray says, "Veteres usum opii ad chronicos unice morbos restrinxerunt." Appar. Med. vol. ii. p. 291.

On the subject of opium the reader will find a great deal of curious and useful information * in Murray's Appar. Med. vol. ii. p. 254., Gottingen edition. Marcet † in his Memoir on the Action of Poisons on Vegetable Substances, informs us, that a bean plant was destroyed in a day and a half by being watered with a solution of opium. For the use of Morphine and Narcotine, in medicine, see Dr. Dunglison's Formulary of New Remedies, p. 1.; also, Magendie's "*Formulaire.*"

CLI.

OPOBALSAMUM, or BALSAM OF GILEAD.

Akooyeela semoon-i-roomie اقويلا سمون رومي (Arab.) *Roughen bulsan* روغن بلسان، (Pers.) *Balessan* (Egypt.) *Balsamier de la Méque* (Fr.) *Opobalsamo* (It.)

AMYRIS GILEADENSIS (Lin.)

Cl. and Ord. Octandria Monogynia. Nat. Ord. Terebintaceæ (Juss.)

This balsam is obtained from the tree just mentioned, by "cutting the bark with an axe; at the time that the juice is in its strongest circulation, which is considered to be in July, August, and September." When it first flows, it is of a yellowish,

* Since I wrote this article, I have been informed by my friend Mr. George Read, who was acting collector in Coimbatore, that he obtained a specimen of opium from the hills near Nellgherry, which was pronounced by the house of Messrs. Letour and Co., Madras, to be nearly equal to the fine Patna opium; and there can be no doubt from the climate of that country, but "that the poppy could be there cultivated with success."

† See Journal of Sciences, Literature, and the Arts, No. xxxix. p. 194.

turbid colour; but after standing some time, it becomes clear, and heavier, and the colour changes into a golden yellow.

I have never met with opobalsamum in any medicine bazar of India; I perceive, however, that it is an article in the *Ulfaz Udwiyeh*, and, therefore, cannot be unknown to the Moguls. We are told by Alpinus, that the tree grows wild in Arabia, and there only; on the other hand, we learn from Mr. Bruce,* that it is a native of Upper Ethiopia, and was thence, at an early period, transplanted into the Southern Provinces of Arabia. Niebhur tells us, that in most parts of Arabia they only burn the wood as a perfume; but that in the neighbourhood of *Hedsjas* they collect the balsam. It is considered almost as a panacea in Egypt, where it is prescribed for bad wounds, ulcers, poisonous bites, and also in nervous and pulmonic affections. The Arabians reckon it amongst their *Adviyah Heezeh* ادويه هيضه (Stomachica.) The opobalsamum of the ancients was an article in a famous Mithridate, which was recommended by Celsus against poisons †, it is said to have been the green liquor found in the kernel of the fruit. The Carpobalsamum is made by the expression of the ripe fruit. There is a third and very inferior kind of balsam, the *xylobalsamum*, which Mr. Miller observes, was prepared by boiling the small twigs; it is I perceive noticed by Celsus, as a medicine of value in nervous affections, see his recipe (Cels. lib. v. cap. xxiv.). The reader will find much curious information, regarding the amyris gileadensis, in the edition of Miller's Dictionary by Martyn. I have doubts, whether much of the real

* See Bruce's Travels, vol. v. appendix, p. 17.
† Vide Cels. lib. v. cap. xxiii.

balsam of gilead is ever brought to Europe, the dried Canada balsam being usually used as a substitute. We are told by Mr. Lunan, in his Hortus Jamaicensis, that there is strong reason for believing, that the *amyris balsamifera* by incision would yield a balsam not much inferior to the balsam of gilead.*

The odour of the real balsam of gilead is at first pungent, but that goes off after some time being exposed to the air, when it acquires the consistence of turpentine; it is yellow outside, and paler within; the taste is pungent and acrid; when good it dissolves easily in water. As a medicine it is scarcely known now in Europe; in Turkey it is used as a cosmetic. The tree which yields the opobalsamum rises to the height of fourteen or fifteen feet, with leaves thinly scattered, small, composed of one or two pairs of opposite leaflets, with an odd one; these are obovate, entire, veined, and of a bright-green colour; the flowers are white, appearing upon the young shoots, three on one stalk, but two generally drop off, and only one produces fruit.† Nine species of amyris are growing in the botanical garden of Calcutta, few of which are natives of India; our article was introduced by Dr. Berry, in 1798, from Arabia. I shall conclude what I have to say on this subject by observing that the Arabians call carpobalsamum, *hubul-bulsán* حب البلسان, the Persians *tokhem, bulsan* تخم بلسان; they consider it as attenuant and cardiac; dose two direms.

The amyris ambrosiaca is a native of Cochin-china, and called there *to-hap-binh-khang*. By Laureiro's account it yields a valuable fragrant balsam (Flor. Cochin-chin, vol. i. p. 230.). This species would also

* See Hortus Jamaicensis, vol. i. p. 147.
† See Thomson's London Dispensatory.

appear to grow in the woods of *Guiana;* its Caribbee name is *arouaou;* the French call it l'arbre de l'encens.

CLII.

OPOPONAX. *Jawesheer* جاوشیر (Arab.) *Gawsheer* گاوشیر (Pers.) *Opoponax* (Fr.) *Panax gummi* (Ger.) *Opoponace* (It.)

PASTINACA OPOPONAX (Lin.)

Cl. and Ord. Pentandria Digynia. Nat. Ord. Umbellatæ.

I have never met with opoponax in any Indian medicine bazar; it has, however, a place in the *Ulfaz Udwiyeh,* and is, therefore, known to the Moguls. The Arabian physicians consider it as discutient, placing it amongst their *Mohelilat* محللات. I perceive by the work just quoted that they also conceive it to be deobstruent, attenuant, and diaphoretic: from the same work we learn, that when fresh taken from the tree it is white, but afterwards changes to a yellow; its solution resembles milk, and the dose is half a direm.

Opoponax is a gum resin of a strong, unpleasant smell, and a bitter, acrid taste. The plant, from the root of which it is obtained by making incisions, is a species of parsnip; it is a perennial, and a native of the South of Europe; rising commonly to the height of four or five feet, with a thick, branched, yellow-coloured root. The Arabians use the whole root occasionally in medicine, terming it *ussul aljewasheer.* What we find of the opoponax used in medicine in Europe, is brought from Turkey; it is considered as antispasmodic and emmenagogue, and

has been given in hysteria and chlorosis, in doses of from grs. v. to ʒss., but is not now, in England, in much repute. The ancients*, particularly Celsus, had a high opinion of the virtues of opoponax, and administered it in affections of the spleen, and in *struma* (Cels. lib. v. cap. xviii.). The physicians on the continent speak of it as "bon discussif, resolutif, chasse les vents, attenue dans l'asthme et les obstructions; tien, selon Pelletier, résine 42., gomme 33., ligneaux 9., amidon 4., malate de chaux 3., cire et caut-choue 6., matiere extractive, &c."†

CLIII.

ORANGE. *Kichlie pullum* கிச்லிபுல்லம் (Tam.) also *Collúngie pullum* கொலுங்கிபுல்லம் (Tam.) *Naringhie* نارنگي (Duk.) *Nárúnge* نارنج (Hind.) *Kichidie pundoo* (Tel.) *Jéroc manis* جروق منيس (Mal.) *Jeruk-legi* (Jav.) *Jaruk manis* (Bali) *Cay-cam* (Cochin-Chin.) *Panneh dodang* (Cyng.) *Naringe* (Hindooie) *Oranjen* (Dut.) Laranga (Port.) *Pomeranzin* (Ger.) *Fnemp* (Japan.) *Arancio* (It.) *Orange* (Fr.) *Pomeranster* (Dan.) *Usi* (Celebes). *Nága runga* नागरंग (Sans.) *Saku limba* (Mah.) نارنج حلو (Arab.)

CITRUS AURANTIUM (Lin.)

Cl. and Ord. Polyadelphia Icosandria. Nat. Ord. Pomaceæ. *Pomeranzin Citrone* (Nom. Triv. Willd.).

* By Dierbach's account in his Mat. Med. of Hippocrates, the plant was the Πηρακλειον of Hippocrates. See his work, chap. vi.

† See Virey's "Histoire Naturelle des Médicamens," p. 220.

The orange tree, though successfully cultivated in the West Indies and the South of Europe, is, properly speaking, a native of India, Ceylon, and Persia. There are many varieties in Hindoostan, differing much in sweetness as well as appearance. In sheltered situations in the lower provinces, such as at *Sautgur*, near Vellore, in the Carnatic, and at Chittore, they are peculiarly fine. The following varieties are cultivated at the last mentioned place*: 1. The cumbla *nabla* (Tel.), which is a large loose-skinned orange; it is the hill orange of the Northern Circars, and is sometimes called *mandarine orange*. 2. The *burray chin* (Duk.), or *buttāi* (Tel.), this is termed in Hindoostanie *sautara* or *sungtura*, and is a fine smooth-skinned, cloved, large orange, and very sweet, resembling what is called the China-orange in Europe (citrus sinensis). 3. The *hydrabādie* (Tel.), this is smaller than the last mentioned, but like it, it is cloved and smooth-skinned, and very sweet. 4. The *chota chin* (Duk.), or small cloved orange. 5. The large *coffrie orange*, the skin of which is very rough; it is a sweet, well-flavoured fruit. 6. The common orange of the country, usually called in Hindoostanie *koula* and *kichlie* (Tam.), it is austere and coarse.

Oranges are brought to India of an excellent quality from Ceylon, and from Sumatra. They are growing wild in Cochin-China (Flora Cochin-China, vol. ii. p. 466.). Mr. Crawford informs us, in his "History of the Indian Archipelago,†" that the orange and lemon tribe is widely spread over the Indian islands, but the culture of the best kinds

* For this information, I am indebted to my excellent friend Mr. S. Skinner, Judge of Circuit.

† See work, vol. i. p. 425.

seems to have been introduced by foreigners. The whole tribe, he adds, is distinguished by a generic name, which in Java is *jaruk*, in more Eastern dialects *usi*. Colonel Kirkpatrick tells us, that in Nepaul* oranges grow of a fine kind in the valley of *Noakote*, and are there called *santola*, which, he thinks, is probably a corruption of the word *singterrah*, the name given to a particular sort in the upper provinces of India; in which provinces the best oranges are those of *Shahabad* and *Behar*.

Oranges are in great repute amongst the Hindoo physicians, who suppose that they purify the blood, allay thirst in fevers, cure catarrh†, and improve the appetite. A sherbet‡, made with the juice of the ripe fruit, is a favourite beverage with Europeans in India in hot weather; and is certainly much safer than that made with lemon juice, which is extremely apt to bring on cholera morbus. The rind of oranges is well known to be a useful carminative, and is a valuable addition to bitter infusions in cases of dyspepsia and flatulence. It is with the rind of the *chota-chin*, or small clove orange, that the finest marmalade is made in India, adding, to give a little bitterness, some of the rind of the common country orange.

The citrus aurantium differs but little in appear-

* See his Account of Nepaul.

† See a Tamool medical Sastrum, entitled Aghastier Vytia Anyouroo.

‡ An acid earth is found in great quantity at a village called *Daulakie* in the South of Persia, and on the Persian gulph; which, singular to say, is used by the natives for making *sherbet*: a portion of this earth has been brought to England by Lieut. Colonel Wright, and on being examined by Mr. Pepys, he found that about a fifth of it was soluble in boiling water, yielding an acid solution, which, when tested, gave proof of the presence of sulphuric acid and iron, and on evaporation, yielded crystals of acidulous sulphate of iron. (Philos. Mag. lxii. p. 75.)

ance from the citrus medica, except that the leaves, not so large as those of the lemon* tree, are more pointed, are entire, smooth, and furnished with wings or appendages on the foot stalks; it may at the same time be observed, that the flowers are large, white, odorous, and arise from the smaller branches upon simple and branched pedicles. Willdenow notices but six species of citrus, of which our article is the fourth. Roxburgh makes what he calls *citrus acida*, and citrus medica, different species; at least so it appears by the Hortus Bengalensis: of the *citrus acida* (and by which, we would understand, is meant the *lime* tree, as distinct from the *lemon*) nine varieties are there noticed; of the *citrus medica* three varieties; besides four other species of citrus: c. aurantium, decumanus, myrtifolia, and inermis; they are all growing in the botanical garden of Calcutta. Forskahl† gives several species of c. medica; the ليمون ملح (Arab.) comes nearest to the Indian fruit.

CLIV.

ORRIS COMMON, or IRIS FLORENTINE, ROOT OF. *Irsá* ايرسا (Hind.) *Ussul-alsosun-ulassmanjoonee* جوني الاسمان اصل السوسن (Arab.) *Iris de Florance* (Fr.) *Violenwurzel* (Ger.) *Ireos* (It.)

IRIS FLORENTINA (Med. Bot.)

* The lemon tree is a beautiful ever-green, of small growth; with alternate leaves, of a pale green colour, ovate, acuminate, about four inches long, and two broad, slightly indented at the edges; and does not appear to have been cultivated in Italy (according to Willdenow's account,) till after the days of Virgil and Pliny.

† See Descriptiones Plant., p. 142.

Cl. and Ord. Triandria Monogynia. Nat. Ord. Ensatæ.

The iris root is a favourite medicine with the Arabians and Persians, who suppose it to have deobstruent and suppurative powers, and place it accordingly amongst their *Mufettehat* مفتحات and *Munzijat* منضجات. The dose about two direms, to which frequently a little honey is added. It is found in the medicine shops of Persia, and the Southern parts of Europe, in mis-shapen, roundish pieces, evidently with the outer skin pared off, full of little holes, and of a dirty white colour. The roots are nauseous, bitterish, and extremely acrid to the taste: all this, however, disappears, or nearly so, on their being dried, when they are easily broken, and have a rather sweetish taste, slight degree of pungency, and agreeable odour, resembling much that of the violet.

In Europe, this root used formerly to be reckoned as a cathartic of some value, in dropsies; now, at least in England, it is almost never used. *Virey* says, "il est errhine, sialogogue, et incisive." *Alibert*, "cette plante passe pour faciliter l'expectoration dans l'asthme, la dyspnée, et autre affections semblables." Vogel would appear to have considered it as drastic and hydragogue.

I find that the same Arabic and Persian names have been bestowed on our article and on what is called the *blue iris*, which I conceive to be a variety of the *iris germanica*, and particularly distinguished by its blue standards and purple falls. Four species of iris were growing in the botanical garden of Calcutta in 1814; none of them Indian plants. "The iris florentina, is a native of the island of Rhodes; it has a tuberous and jointed root, which sends off many fibres from the under part; the leaves

spring directly from the root, spreading in opposite directions, and are of a sea-green colour, but yellow at the base; the stem rises amidst the leaves upwards of a foot in height, and commonly bearing two large flowers, of a pale whitish colour." I shall conclude what I have to say of iris florentina, by observing, that Celsus places the root of it amongst his purgatives (lib. v. cap. v.), adding, "ad discutienda vero ea, que in corporis parte aliqua coierunt, maxime possunt, abrotonum, alba viola, mel, iris, &c. &c." (Lib. v. cap. xi.).

CLV.

ORTOLAN. *Bergherie* برگیری (Hind.) also *Bageyra* (Hind.) *Ortalon* (Fr.) *Ortolano* (It.) EMBERIZA HORTULANA (Var.)

This beautiful little bird* is not uncommon in many of the Indian provinces, particularly in the *Puraniya* country; and, at certain seasons, is anxiously sought after by the European inhabitants, who consider it as a great delicacy, especially when fat. This Indian bird is a good deal like the ortolan of Europe, and by Dr. Hamilton's account (MSS.), resembles much the calandre lark of Latham, though he suspects that they are still a distinct species. The quill feathers are darkish, the three outer ones with whitish margins; the tail feathers black, the two lateral ones, externally, white; it is somewhat smaller than the yellow-hammer, and makes a singular whistling noise. The real ortolan is not found in Great

* General Hardwicke informs me, that he observed and drew several species of emberiza; but our article is the only one sought after as food.

Britain, but in various other parts of Europe. Those of the plains about Toulouse are reckoned superior to those of Italy.

CLVI.

OYSTER. *Alie* சிப்பி (Tam.) *Puttirke seepie* پهتركي سيپي (Duk.) *Ostrica* (It.) *Kustura* (Arab. and Hind.) *Tirram* (Mal.) *Cavatie* (Cyng.) *Ostras* (Port.) *Osters* (Dan.) *Huître* (Fr.) *Tirim* تيرم (Mal.) also *Badlan* بادلان (Arab.) *Mooroo* (Malealie). *Mow-le* (Chin.) استرديا (Pers.) *Ostrica* (It.)

OSTREA EDULIS.

The oysters of the Coromandel coast, though by no means large, are inferior to none in any part of the world, and are best in the months of May, June, July, and August. The places they are found, of the best quality, are the following: at *Alumparva*, *Ennore*, and near *Ramnad;* at these fisheries they are excellent; at *Karikaul*, *Topetory*, and Sadras, not quite so good; at Fort St. David and Cuddalore tolerably good. On the Malabar coast the best oysters are procured at Callicut; they may also be got of a good quality near Tellicherry, and, in fact, at many other places along the shore; also at the mouths of several rivers, where oyster-beds have been made by the natives. They are best in Malabar in the months of March, April, and May.

The oysters brought to the Calcutta market are mostly all from Chittagong; they are very large, so much so, that they require being divided before they are eaten; at certain seasons they are much prized.

I have been informed, that the variety of oyste

called *rock-oyster* by the English fishermen, is occasionally met with in some parts of the Coromandel shores; distinguished by being *thin*, and having membranaceous plates, wrinkled into irregular, interrupted ribs; the upper valve flat, and a corneous margin half an inch broad; but I cannot say that I have ever seen it.

CLVII.

PARTRIDGE, COMMON GREY. *Cowdārie* கவுதாரி (Tam.) *Kowoonzu* (Tel.) *Ibn tahir* ابن طاهر (Arab.) *Kúbak* کباک (Pers.) *Téetúr* تيتر (Duk.) *Firfir* فرفر (Pers.) *Boorongsofo* (Mal.) *Tittira* तित्तिर or *Tittiri* तित्तिरि (Sans.) *Teter* (Mah.) also قبج (Arab.) بوروع سونو (Malay). *Pernice* (It.) *Perdrix* (Fr.)

TETRAO CINEREA (Lin.)

Partridges are common in, I believe, every part of India, and during the season that the small, dry grains are ripe, are sought after; though, generally speaking, they are inferior as food to the same bird in Europe, being dry, and rather insipid. They are chiefly sought after by the Mahometans, who keep them, as they also do quails, *loha* لهوها (Duk.), for fighting, as we do cocks in England. There are several varieties of the tetrao cinerea in India, which have not, hitherto, been scientifically examined; and, I may add safely, some species* of tetrao (Lin.) or perdix (Cuv.), still to be more accurately described:

* The excellent General Hardwicke informs me, that he had drawn eight species in the Bengal provinces; in a valuable manuscript volume at the India House, prepared chiefly by Dr. F. Hamilton, thirteen or more species of partridge and quail together, are well described.

one not noticed by Buffon, Dr. Hamilton is inclined to call *perdix sylvatica*, MSS.; and there is a large and most beautiful bird, of this kind, in the more Northern tracts of the Ganjam district, named the *cattack partridge*, which I have met with no where else; it is of a dark-brown colour, and has on its back, breast, &c. many golden-coloured spots; the bird is scarce, and differs from the more common, *kala titur*. *Chukwur* چکور is the Hindoostanie name of a species of partridge frequently met with, I understand, in the upper provinces of India, and also common in Nepaul, which the Hindoos suppose capable of eating fire. As far as I can learn, it is a variety of the *tetrao rufus* of Linnæus, at least it would appear to come nearer to that than any other species. This is commonly known in Europe under the trivial name of the red or Guernsey partridge; it is singular that all attempts to introduce it into England have hitherto failed. Of partridges, the *Vytians* of Lower India say, that the flesh of the cock bird occasions too much bile, but that that of the hen strengthens the body. The Arabians and Persians hold the eggs of the partridge in high estimation; and place them (*byzeh kubk* بیضه کبک) amongst their Aphrodisiacs (*Mobéhyát* مبهیات). We are informed by Captain Macdonal Kinneir, in his "Geographical Memoir of Persia," that a black partridge, *kala titur*, is common in the province of Scind (p. 244.).

The quail (tetrao coturnix) is common in India, and, as food, is supposed to differ in nothing from the partridge. It is *kikilivie* (Sans.) also *bartalo*; *kaday* (Tam.); *loha* لهوا (Duk.); *bater* (Hind.); *wurtung* ورتنج (Pers.); *salway* (Malay); *sumanie* سماذ (Arab.); *pooredoo* (Tel.). The *Vytians* recommend

the flesh in incontinence of urine. It is also a medicine amongst the Chinese, who call the bird *chuh-ke*.*

CLVIII.

PEACOCK. *Mÿle* (Tam.) *Nílkantha* नीलकंठ (Sans.) *Nèmilie* (Tel.) *Mayúra* मयूर *Varhi* वर्ही (Sans.) *Moor* مور (Hind.) *Navelu* (Can.) *Moor* (Hindooie) *Tāous* طاؤس (Arab.) *Mírrík* مرؤ (Mal.) *Paon* (Fr.) *More* (Mah.) *Pavone* (It.) *Kung-tseo* (Chin.) مرغ (Pers.)

PAVO CRISTATUS (Lin.)

Peacocks, though long naturalized in Europe, are of Eastern origin. They are found in abundance in many parts of India, and, it has been observed, commonly in those jungles most resorted to by tigers. On the islands of the Chilka lake, near Ganjam, there are great numbers, and so tame that they will allow you to pass them almost quite close without taking flight. To see them floating about in the air, if I may use the expression, in their native woods, their lovely plumage brightening in the sun, is certainly amongst the most beautiful objects in nature.

The peacock when young, or rather the young peahens, at certain seasons, are not inferior to turkeys, as food; indeed, in India, they are generally preferred. The flesh is amongst the medicines of the

* Dr. Horsfield, in the xiii. of the Transactions of the Linnæan Society, describes three species of partridge as natives of Java: 1. Perdix chinensis of Latham (Ind. Orn. 652.), which is the *pikur* of the Javanese. 2. Perdix Javanica, the *dagu* of the Javanese. 3. Perdix orientalis (Horsf.).

Hindoos, and may be found particularly noticed as such in the *Poorna Soostrum*, a Tamool medical sastrum, which treats of religious disciples and of their forms of devotion, and also of the Materia Medica; it is written by Aghastier, and consists of 216 verses. In the *Vytia Anjouroo*, by the same author, we are told, that it is prescribed with great advantage in all cases of contracted limbs.

"Peacocks had never been seen by Alexander till he entered India, where he found them flying wild on the banks of the Hyarotis, and was so much struck with their beauty, that he decreed a severe punishment on all who should molest them. They were introduced into Rome towards the decline of the republic, and the orator Hortensius was the first who had them presented at table, at a feast which he gave the Augurs." Celsus believed the flesh of the peacock to be particularly wholesome: "item omnem grandem avem, quales sunt anser, et pavo, et grus.*" Pliny, in speaking of the same bird, says, "qua in mentione significandum est pavones, fimum suum resorbere tradi invidentes hominum utilitatibus, accipiter decoctus in rosaceo efficacissimus ad inunctiones omnium putatur; item fimi ejus cinis cum allico melle.†"

Peacocks are common in Guzerat, Cambay, the coast of Siam, and Java. As early as the days of Solomon they were imported into Judea, by the fleets which that monarch equipped in the Red Sea, and which, in all probability, traded to the coast of Malabar.

As in every animal capable of being domesticated, so there are varieties of the peacock; for instance, we

* Vide Cels. lib. ii. cap. xviii.
† Vide Pliny, lib. xxix. cap. vi.

know that the peacock of Norway, and which migrates during winter into Germany, has the wings, cheeks, throat, and upper part of the belly white. The beautiful bird, however, which may be seen, well preserved, at the museum of the India House, and which was brought home from Java by the erudite and scientific Dr. Horsfield, is, no doubt, a distinct species: the neck and breast, in place of being of a glistening purple colour, is covered with moons, much resembling those of the tail of the common peacock. Dr. H. has bestowed on it the scientific appellation of *pavo primus*. In Bengal there are two varieties of peacock; one with a white ring round the eye, the other with a yellow one.

CLIX.

PEARL. *Mootthoo* முத்து (Tam.) *Mootie* موتي (Hind. and Duk.) *Looloo* لولو (Arab.) *Mirwareed* مرواريد (Pers.) *Mootie* (Hindooie). *Mootium* (Tel.) *Muktá* मुक्ता (Sans.) *Moottoo* (Cyng.) *Mootara* (Malay.) *Perla* (It.) *Paarlen* (Dut.) *Perolas* (Port.) *Perle* (Fr.) *Perler* (Dan.) also *Mutya* (Malay).

MARGARITA.

There would appear to be several Arabic names for a pearl. *Júhúr* جوهر is a common name in Arabia for all precious stones, but is more particularly applied to the pearl. Other names for pearl in that country are *gémān* جمان, also *shuzzir* شزر. The Arabian physicians suppose the powder of the pearl to have virtues in weak eyes; they also consider it as having efficacy when administered in palpitations, nervous tremors, atrabilarious affections,

and hemorrhage. They have, besides, this strange notion, that when applied externally, while in its embryo state in the shell, it cures leprosy.*

The pearl, though it formerly had a place in the British Materia Medica as an antacid, is now exploded. The Indian practitioners, especially the *Vytians*, recommend it to the affluent, calcined, in cases of *azirna pedie* (Tam.) (lientery), and *pittie érivoo* (heartburn), as also in *kistnah doshum* (typhus fever). The Arabians place the pearl amongst their *Mokewyatdil* (Cardiaca) دل مقويات.

The pearl, which is well known to be a small, round or oval concretion, of a bright translucent whiteness, found in the inside of the shell *concha margaritifera* (Lin.), or mother-of-pearl fish, is of great value when of the best quality. Those procured from the pearl oysters found in the bay of *Condatchy*, on the island of *Ceylon*, are very beautiful; as are those got at the Southern extremity of the Indian peninsula. Pearls are also brought from the gulph of Persia, near the *Bahrin island*, and from the shores of the island of *Kharrék*†, in the same gulph; these, though large, are not so white or round as the pearls of *Ceylon*. Pearls are found, by De Comyn's account‡, at *Mindano*, and on some of the smaller islands, not far from that of *Zebu*; they may also be obtained, of a good quality and in abundance, at the *Soolloo* islands, and on certain shores of *Japan*§, *Sumatra*, *China*, *Java*‖, in the

* See *Ahmed Teifascite's* work on Precious Gems, as translated from the original Arabic by Antonio Raineri, Professor of Oriental Languages at Florence. Article Pearl, p. 5.

† See Morier's Journey through Persia, p. 53.

‡ See his State of the Philippine Islands, pp. 38, 39.

§ See Tavernier's Indian Travels, part. ii. book ii.

‖ See Asiatic Journal for Dec. 1816. p. 605.

islands of *Mergui* and *Borneo*.* What are called the occidental pearls, are procured, in vast quantities, near *Panama*, in Terra Firma proper, between the islands of *Cubagua*† and *Coche*, and the coast of California; in the gulph of *Mexico*; along the coast of New Spain; off *St. Margarite*, or the Pearl Island; in the *Rio de la Hacha*; and in the islands of *St. Martha*, *Quibo*, *Gorgonia*, &c. In Europe they have now and then been met with on the coasts of *Scotland*, *Livonia*, *Courland*, in the river *Ilts* in Bohemia, in the *Regen* (a river in *Bavaria*), and in certain lakes near *Augsberg*.

The colour the most desirable in a pearl is a silver-like brightness, and with this quality the largest is, of course, the most valuable; the most beautiful shape is round; it has been observed, that the larger ones have often the figure of a pear. One of the most remarkable for size, hitherto known, was bought by Tavernier, at *Catifa*, in Arabia, for the sum of 32,000 tomans (110,000*l*.), a fishery famous even in the days of Pliny‡; it is regular, without blemish, and shaped like a pear; the diameter of it is 0.63 inch, at the largest part, and the length from two to three inches. The same writer tells us, that at the pearl fisheries in Eastern countries it has been observed, that the greater the quantity of rain that falls during the year, the more profitable is likely to prove the fishing. Mr. Crawfurd, in his Account of the Indian Archipelago, informs us (vol. iii. pp. 444, 445.), that "the pearls, and the mother-of-pearl oyster, are productions of the seas of the Indian

* See Leyden's Sketches of Borneo, vol. vii. of the Batavian Society.

† See Anson's Voyage round the World.

‡ "Verum Arabiæ etiamnum felicius mare est; ex illo namque margaritas mittit." Pliny, lib. xii. cap. xviii.

islands: the first, as an object of trade, are found no where but in the *Suluk Islands*, and the last principally there also. The quantity of pearls annually exported from the Saluk group to China is reckoned worth, on the spot, 25,000 Spanish dollars; and the quantity of mother-of-pearl shell obtained there, and exported to the same country, is about 5000 piculs, worth in China, at the rate of fourteen Spanish dollars the picul, 70,000 dollars, or 15,750*l.*" The revenue derived from the Ceylon pearl fishery, of late years, has not been more than 45,000*l.* per annum.

The pearl oyster is found at a considerable depth at the bottom of the sea; is very coarse, and forms no part of the food of the Indians; it is called in Sanscrit *shookti*. The production of the pearl within it has excited much curious speculation amongst naturalists. While some suppose it to be an accretion, within the animal, of the superabundant matter called mother-of-pearl, which coats over the inside of the shell; others, among whom is Reaumur, consider it a disease of the fish, similar to bezoar; pearls like it being composed of lamellæ, or coats formed round a foreign nucleus: in this way, the modern Chinese force certain shell-fish (mytilus cygneus), or swan muscle, to produce pearls, by throwing into the shell, when it opens, five or six minute mother-of-pearl beads strung on a thread; in the course of one year these are found covered with a pearly crust, which perfectly resembles the real pearl.

For curious instructions for making artificial*

* The glass pearls, so much in vogue at present, and which approach as near as possible to nature, were invented by a French bead-maker, named Jaquin; they are made by covering the inside of hollow glass beads with the soft shining powder obtained from water in which scales scraped from the fishes, called ablettes, had been allowed to remain some time. See Beckmann's History of Inventions, vol. ii. p. 12.

pearls, the reader may consult Smith's School of Arts (vol. i. p. 161.), as also a paper of Reaumur, in the Memoirs of the French Academy for 1716; by which last we perceive, that what is used to give the pearly lustre, is often a fine silver-like substance, found on the under side of the scales of the *blay*, or *bleak fish*. This mode Mr. Smith notices as the best for imitating pearls; in all the methods he recommends, however, the *seed pearls* are required; but at Rome, where what is called the *Roman pearls* of commerce are made, and than which no real pearl is more beautiful, the purest and finest alabaster is preferred; the pearly lustre being added by means of the substance above mentioned, procured from the bleak fish.

I have noticed above, and generally speaking it holds good, at least in Eastern countries, that the pearl oysters are not used as food by the Indians; but I find from "Morier's Journey through Persia" (p. 55.), that those of that country are excellent; not at all inferior to the common oyster. The same interesting writer tells us (p. 53.), that of the Persian pearl there are two sorts, the yellow and the white; the first is commonly sent to the Mahratta countries; the white is circulated through Bussora and Bagdad, into Asia Minor, and thence into the heart of Europe. The seed pearls are arranged round the lips of the oyster, the large ones are nearly in the centre of the shell and middle of the fish. I see by the Journal of Science*, that very beautiful pearls have lately been found in oysters procured from the river Tay, in Scotland. Hatchett, by analysis, found pearls to consist of alternate strata of a thin mem-

* Journal of Science, No. xxix. p. 427.

branous substance; being a compound of 66 parts of carbonate of lime, and 24 of albumen.

The pearl fisheries, at one time, in America* were most productive. We know that in 1587, upwards of 697lbs. of pearls were imported into Seville, amongst those some of great value for Philip the Second, who had one from St. Margarita, which weighed 250 carats, and was valued at 150,000 dollars. Those of the *Seychelles* Islands are often large and beautiful; but they are, it would appear, got with difficulty, from the great depth of sea in which they are found.

CLX.

PEA. *Puttanie* பட்டாணி (Tam.) *Vātānā* (Guz.) *Buttaní* بٹّاني (Duk.) *Goondoo Sānighéloo* (Tel.) *Wan* (Japan.) *Muttir* (Hind.) *Harenso* (Sans.) *Muthur* (Hindooie). *Kirseneh* كرسنه (Pers.) *Pois* (Fr.) *Pisella* (It.) *Watana* (Mah.) PISUM SATIVUM (Lin.)

Cl. and Ord. Diadelphia Decandria. Nat. Ord. Papilionaceæ. *Gemeine Erbse* (Nom. Triv. Willd.).

The pisum sativum is said to be a native of the South of Europe; but we are told by Loureiro, that peas are natives of China, and Cochin-China, and called in the last mentioned country *dau-tlon* (Flor.

* The pearl-fishery of Colombia, has of late years been considered as of great value; and I perceive by an excellent work, entitled, "Journal of a Residence in Colombia, during the years 1823, 1824," by Captain C. Stuart Cochrane, that the exclusive right of that fishery had been granted by the last congress to *Messrs. Rundell, Bridge*, and *Rundell*, of London, for the term of ten years. See more respecting pearl, in Part iii. of this work.

Cochin-China, vol. ii. p. 443.). Thunberg says, the pea is cultivated in most provinces of Japan; and I have every reason to believe, that it is indigenous in Central India, as we find whole fields of peas growing in many parts of the Mahratta country. In the more Southern tracts of the peninsula they are only cultivated by the European inhabitants, who, with care, have them in great perfection in the cool season.

Some people find peas flatulent, but with others they agree well; and we know, that the pulses are in a peculiar degree nourishing. The variety of these cultivated in the Northern parts of Hindoostan is great. The Afghans, and the Persians of the Southern provinces, who rear but little rice, feed chiefly on them; and I am inclined to think, that this is one cause why they are the strongest, most muscular, and, perhaps, the handsomest race in the world. Two of the pulses most in esteem in those regions are the *towaray* (Tam.), and the *carpoo woolandoo* (Tam.). The first the Persians call *shakhool*, the Mahrattas *toor*, and the Bengalese *urhur;* it is the *thora pæru* of Rheed, the *citysus cajan* (Lin.), and is sometimes called by the English *pigeon pea*. The second is the *mowng* of the Hindoos of the higher districts; it is the mash ماش of the Arabians; the benoomash بنوماش of the Persians; the *kachang kádalé* of the Malays, and the *chícúdú* of the Canarese; in Bengal it is sometimes termed *ticoray colai;* in Sanscrit it is *māsha* माष.

The Greeks called the pea Πίσον, from Pisa, a town of Elis, where, we are told, they grew in great plenty. Pliny seems to have entertained a strange idea, that lentils, when taken as food, had the effect of producing equanimity: "Invenio apud auctores,

æquanimitatem fieri vescentibus ea.*" Celsus† was of opinion, and perhaps he was right, that peas were less nourishing than what are commonly called the pulses or legumes: "Ex leguminibus vero valentior faba, vel lenticula, quam pisum." A very good kind of coffee may be made from toasting the *chick pea*, which I find is sometimes done even where the true coffee should not be scarce, such as in *Egypt*, in which country this pea is called *hómus* حمص, according to Forskahl; it is in Tamool *cádálei; chāná* (Guz.); *hurbhury* هربهري (Duk.); *sanigheloo* (Tel.); *chenna* (Hind.); *nakhood* نخود (Pers.); *chennuka* (Sans.). It is the cicer arietinum of Linnæus, and is, by Professor Link's account, much eaten by the lower classes in Spain‡, where it is named *garvanzos*.

CLXI.

PEACH. خوخ *Khowkh* (Arab.) شفتالو *Shuftaloo* (Pers.) *Persica* (It.)

AMYGDALUS PERSICA (Lin.)

Cl. and Ord. Icosandria Monogynia. Nat. Ord. Rosaceæ (Juss.).

The amygdalus persica, with care, now grows tolerably in the Mysore country, and in Upper India; and produces pretty good fruit. By Mr. Moon's account it also grows in Ceylon, whither it was brought from Persia (See his Catalogue of Ceylon Plants, p. 39.)

* See Pliny's Natural History, lib. xviii. cap. xii. p. 449.
† See Cels. de Medicina, lib. ii. cap. xviii. p. 84.
‡ See Link's Travels, p. 195.

CLXII.

PELLITORY OF SPAIN. *Akkárákārum* வகக்ராகாரம் (Tam.) *Parietaria* (It.) *Parietaire* (Fr.) *Akkaraputta* (Cyng.) *Akkurkurha* عاقرقرحا (Arab. and Duk.) *Pyrethre* (Fr.) *Zahn wurtzell* (Ger.) also *Pietro* (It.) *Sesin* (Chin.)

ANTHEMIS PYRETHRUM (Lin.)

Cl. and Ord. Syngenesia Superflua. Nat. Ord. Compositæ Discoideæ. *Speichelerregende Chamille* (Nom. Triv. Willd.).

This root is to be found in most of the Indian bazars; though I cannot learn, that the plant grows in any part of India. It is a native of Arabia, Syria, Calabria, Crete, and Bohemia; and it is, no doubt, from the first mentioned of these countries, that it is brought to Hindoostan, an export from Mocha. I am much inclined to think, that it is the root we find noticed by Forskahl in his *Materia Medica Khairina*, under the name of *ood alkurrakh* عود القرح; with regard to its Asiatic names, there is this peculiarity, that its Arabic, Persian and Dukhanie appellations are nearly the same.

The pungency of the pellitory root (which is long and tapering, and not thicker than the finger), is not perceived till it has been chewed for a few seconds, when it occasions at first a glowing heat in the mouth, soon followed by a pricking sensation in the tongue and lips. The *Vytians* prescribe an infusion of it, in conjunction with the lesser galangal *sitta-*

rittie (Tam.), and ginger, as a cordial and stimulant in lethargic cases, in palsy, and in certain stages of typhus fever; they also order it to be chewed, as a masticatory for the toothache. It certainly possesses powerful stimulant properties, but is scarcely ever employed in Europe as an internal remedy; though it has been found useful as a sialagogue, and as such, Dr. Thomson says, has been given with success in some kinds of headache, apoplexy, chronic ophthalmia, and rheumatic affections of the face.

With regard to the chemical properties of the pellitory root, Alibert says, "par la distillation, cette racine fournit une huile butyracée très acrimonieuse.*" By the Persians and Moguls it appears to be considered as discutient and attenuant; and is placed accordingly amongst their *Muluttifāt* ملطفات: the dose two dangs. See a work entitled شرح اسباب وعلامت by Nafis Ben Abiez, dedicated to Sultan Ulugh Beig Gurgan. †

The anthemis pyrethrum is a perennial plant, having leaves doubly pinnate, with narrow linear segments of a pale green colour; the flowers large, with the florets of the radius white on the upper, and purple on the under side: and those of the disc yellow. But one species of anthemis was growing in the botanical garden of Calcutta in 1814., the anth. cotula (Willd.), introduced from Europe.

Celsus informs us, that pyrethrum was one of the articles contained in a famous *malagma* (cataplasm), which was employed as a resolvent, and for maturing‡

* See Nouveau Elémens de Thérapeutique, vol. ii. p. 214.

† The Arabian physicians, in the days of Avicenna, prescribed pellitory in rigors; "ante rigoris invasionem ex oleo corpori affricatum contra rigorem valet, sive cum febre veniat, sive citra febrem." Vide Canon. lib. ii. tract ii. p. 232.

‡ Vide Cels. lib. v. cap. xvii.

pus; he also mentions it as useful for opening the mouths of wounds.*

CLXIII.

PEPPER, BLACK. *Méllághoo* மிளகு (Tam.) *Gammiris* (Cyng.) *Miriāloo* (Tel.) *Meeritch* (Hindooie). *Maricha* मरिच (Sans.) *Gol-mirch* (Hind.) *Kali mirchie* كالي مرچي (Duk.) *Filfil Uswud* فلفل اسود (Arab.) *Filfil seeah* فلفل سياه (Pers.) *Lada* ലാടം (Mal.) *Maricha* (Jav.) *Micha* (Bali). *Sahan* (Palembang). *Poivre* (Fr.) *Schwarzen pfeffer* (Ger.) *Pepe nero* (It) *Pimiento* (Sp.) *Pimenta* (Port.) *Kaly meerchingay* (Mah.) *Hootseaou* (Chin.)

PIPER NIGRUM (Lin.)

Cl. and Ord. Diandria Trigynia. Nat. Ord. Piperitæ.

In no part of the world does this species of pepper grow in greater abundance than on the Malabar† coast; whence it is a most lucrative export. It is, however, a production of many other Eastern countries; but in all these, Mr. Crawfurd‡ informs us, of a quality inferior to that of Malabar. The kingdom of Bantam on Java, alone, used to furnish to the Dutch‖, six milllions of pounds annually;

* Vide Cels. lib. v. cap. iv.

† Dr. Buchanan says, in his "Travels through Mysore, Canara," &c. (vol. iii. p. 269.), that the best black pepper that grows in Southern India, is that of *Nagara*, much better than that of the district of Malabar: that of Nagara, sells at the rate of 515 lb. for 92 rupees.

‡ See his History of the Indian Archipelago, vol. i. p. 481.

‖ See Sketches Civil and Military of Java, p. 37.

though Mr. Crawfurd is of opinion, that the Java pepper is the worst that grows in the Indian Archipelago. On Sumatra, three different kinds of black pepper are cultivated; the *lada lawor*, the *lada manna*, and *lada jambee*; the first or *lampoon* pepper, is reckoned the best and strongest. On *Borneo**, pepper was first cultivated by the Chinese, about fifty years ago; the produce of that island is not good. At *Palembang* there is now produced upwards of fifteen thousand peculs annually. It is a common produce of Siam, at Prince of Wales's Island; at Malacca, and at the Philippine† islands much attention is given to the rearing of this spice.

The piper nigrum, the *tieo-bo* of the Cochin-Chinese‡, is the *mélágho-codi* of Rheede (Hort. Mal. vii. p. 23. t. 12.), is a vine requiring the support of other trees; those commonly planted for this purpose in India, are the *betel nut* palm (arecha catechu), the *moochie wood tree* (erythrina Indica, Willd.), the *mango tree* (mangifera Indica), the *jack tree* (artocarpus integrifolia), and the hyperanthera moringa; but it has been remarked, that the vines which cling round the two last thrive best. The trees commonly preferred in the islands of the Eastern Archipelago, are what the Malays call the *dapap* (erythrina corallodendron), and the *mánghúdú* (morinda citrifolia). The plants are about four years old before they produce fruit, and the berries are nearly five months in

* See Dr. Leyden's Sketches of Borneo, in the seventh volume of the Transactions of the Batavian Society.

† See De Comyn's State of the Philippine Islands, p. 20. Pepper is there chiefly cultivated in the provinces of Tayabas and Laguna.

‡ Loureiro speaks highly and justly of the virtues of black pepper, extending its tonic virtues to the brain as well as the stomach. Vide Flora Cochin-China, vol. i. p. 30.

coming to perfection, from the time they first appear. The plant is the فلفل of Serapio (c. 367.). The Arabs consider pepper as powerfully deobstruent, and as such, I see it has a place amongst their *Mufettehat* مفتحات. With regard to the notions of the ancients respecting pepper, the reader may consult Pliny and Celsus; the first (lib. xii. cap. vii.) tells us where it was produced best in his day, and enumerates three sorts; the second mentions both the round and long pepper amongst his diuretics* (lib. ii. cap. xxxi.). Nine species of *piper* are growing in the botanical garden of Calcutta; eight species grow in Ceylon.

As a medicine, the native doctors of India consider black pepper as stimulant and stomachic, and prescribe an infusion of the toasted berries in cases of cholera morbus; and I have myself known it put a stop to the vomiting in this disease†, when many other remedies had failed. They also prepare with it a kind of liniment, which they suppose to have sovereign virtues in chronic rheumatism. In Europe it is occasionally employed as a stimulant in retrocedent gout, and in palsy. The watery infusion has proved a useful gargle in relaxation of the uvula. The dose of the black pepper may be from six grains to a scruple. What is commonly called *white pepper*, is merely the black pepper blanched by steeping it for a time in water, and afterwards gently rubbing it, so as to remove the dark outer coat; it is considerably milder than the other, and is much

* The same virtue in pepper is noticed by Rhazes. Vide Opera Aphorismorum, lib. iii. p. 536.

† Though a far more certain mode of combating that disease, in its sporadic form, is by a speedy use of calcined magnesia, given not in milk, but in tepid water.

prized by the Chinese; a great deal of it is prepared at Bencoolen. It appears from Avicenna (Can. lib. ii. tract ii.), that in his day the white pepper was most esteemed as a stomachic; and Celsus says, that it was one of the ingredients used in preparing a famous antidote (lib. v. cap. xxiii.). The use of black pepper as a seasoner of food, will be noticed in another part of this work, suffice it here to observe, that it is a never-failing ingredient in many of the Indian dishes, *curries, mellaghotānie, pilloes,* &c., as well on account of its pleasant flavour, as from a conviction of its powerful stomachic* virtues; it is, doubtless, the most valuable of all the spice kind. Before concluding, I shall shortly state, that the piper nigrum is "a climbing plant; the *leaves,* which are ovate, entire, pointed, seven-nerved, and dark-green, are petiolate at the joints of the branches; the *flowers* are sessile, white, small, and placed on terminal spikes, without any regular calyx or corolla; the fruit is a globular berry of a red-brown colour."

The piper peltatum, Dr. Horsfield informs us, is common at Java, there called *lamba-ang gelumbo.* The fruit is applied, externally, in swellings and dropsies, in many of the Eastern islands. Mr. Brande regrets, that the piper nigrum has not been satisfactorily analyzed; it contains, he adds, a volatile oil, with starch and extractive matter.

* A virtue Roques is quite sensible of: in his Phytographie Medicale he says, in speaking of it, "il corrige par sa qualité stimulante les alimens fades ou visqueux, reveille les facultés digestives; et donne aux temperamens inertes un sentiment de force et d'alacrité."

CLXIV.

PEPPER, CAYENNE, or CHILIE. *Móllághāi* மொளகாய் (Tam.) *Mérápákāia* (Tel.) *Brahn maricha* (Sans.) *Lāl mirchie* لال مرچي also مرچ لال (Hind.) *Fúlfili súrkh* فلفل سرخ (Pers.) *Felfel-achmar* (Arab.) *Meneshéna* (Can.) *Lombok* (Jav.) *Lada mira* ലാടമുറ (Mal.) *Tābia* (Bali). *Poivre d'Inde* (Fr.) *Spanischer oderkercher pfiffer* (Ger.) *Pepperone* (It.) *Gasmiris* (Cyng.) *Tambhudda meerchingay* (Mah.)

CAPSICUM FRUTESCENS (Lin.)

Cl. and Ord. Pentandria Monogynia. Nat. Ord. Luridæ.

Our present article, which is universally called red or Cayenne pepper, or Chilie by the English in India, is not the produce of the capsicum annuum, but of the capsicum frutescens (Lin.), which is the capsicum Indicum of Rumphius (Amb. 5. d. 248. t. 8.); it is usually termed the *shrubby capsicum* plant by botanists, and is the *cāpó-mólágó* of Rheede, in contradistinction to the capsicum annuum, which he calls the *Vāllía-cāpó-mólágó*. The difference betwixt the two does not appear to be considerable, and would seem chiefly to consist in the nature of the stem, which in our article is shrubby; while in the other it is herbaceous. The Chilie plant is the *lat-tsiao* of the Cochin-Chinese, who use much of the fruit with their victuals (Flor. Cochin-Chin. vol. i. p. 128.). It is cultivated in every part of India, on account of

the pod, or rather pod-like berry, so much used by the natives as a warm seasoner. As a medicine, the *Vytians* believe it, and justly, to be stomachic and stimulant; and also prepare with it cataplasms, which they employ in cases requiring rubefacients. It has of late years been successfully given in England in atonic gout, dyspepsia, accompanied with much flatulence, tympanitis and palsy. Dr. Wright has recommended capsicum in dropsies, and other cachectic complaints, when chalybeates are at the same time indicated :—dose from gr. vi. to gr. x. in pills; of the tincture, from ʒi. ʒij. in a glass of water. As a gargle it is supposed to clean, without impeding the healing of ulcers in the fauces; this gargle, Dr. Thomson says, is prepared by beating into a paste ʒi. of the cayenne pepper, and ϑi. of common salt, then adding ℥vi. of boiling water, and to the solution, when cold, ʒv. of vinegar. With hogs' lard, capsicum forms a good liniment for paralytic limbs.

There are growing in the botanical garden of Calcutta, six species of capsicum; the annuum, grossum, frutescens*, baccatum, purpureum, and minimum. The grossum is called in Hindoostanie *kaffrie-murich*. Of our article, the frutescens, there are two varieties, the red and yellow, termed in Bengalese *lall-lunka múrich* and *huldi-lunka múrich;* the two last species have been scientifically examined by Dr. Roxburgh; of these the minimum is named in Hindoostanie *dhan-murich*. The c. grossum bears a fruit as large as a small apple, which is called by the English in

* Mr. Moon, in his valuable Catalogue of Ceylon Plants, informs us, that the Cyngalese name of the capsicum frutescens is *gas miris*, and that there are three varieties of the plant in that island; a red, a yellow, and a black. See work, p. 16.

India *coffrie Chilie ;* it is preferred for pickling, the skin being fleshy and tender: the seeds are previously taken out. Virey*, in his "Histoire Naturelle des Médicamens," expresses a singular notion, that it is owing to an abuse of this pickle that the inhabitants of hot climates suffer so much from liver complaints.

The Chilie plant is constantly found in its wild state in the Eastern Islands†, though, from its being so commonly called Chilie, Rumphius argues its American origin. "It seldom rises higher than four feet, with a roughish stem, and branches diffused, and often scandent; the *leaves* are lanceolate, quite entire, waved, small, smooth, petioled, alternate or scattered; *flowers*, axillary, small, white, and five or six-cleft."

Capsicum is supposed by the German physicians to be peculiarly injurious in gonorrhæa, "imo gestatum in linteo supra abdomen, gonorrhæum post octo menses resuscitavit" (Murray's Appar. Med. vol. i. p. 704.).

CLXV.

PEPPER, LONG. *Tipílie* திப்பிலி (Tam. and Cyng.) *Pipúloo* (Tel.) *Pipilie* పిప్పిలి (Duk.) *Pipel* (Hind.) *Pippalī* पिप्पली also *Krishnā* कृष्णा (Sans.) *Dar filfil* دار فلفل (Arab.) *Filfili daraz* فلفل دراز (Pers.) *Tābee* تابى (Mal.) *Chabi-jawa* (Jav.)

* See the work, p. 182.

† See Crawfurd's Eastern Archipelago, vol. i. p. 377.

Poivre longue (Fr.) *Langer pfeffer* (Ger.) *Pepe lungo* (It.) *Pimienta larga* (Span.)

PIPER LONGUM (Lin.)

Cl. and Ord. Diandria Trigynia. Nat. Ord. Piperitæ.

This species of pepper, which is the *cay-lot* of the Cochin-Chinese*, is produced in abundance in many parts of Upper as well as Lower Hindoostan. The berries are small, and lodged in a pulpy matter, like those of the black pepper; they are at first green, and become red when ripe. Having been found to be hottest in their immature state, they are then gathered and dried in the sun, when they change to a dark grey colour. It is imported in the entire† spikes, which are about an inch and a half long, and indented on the surface.

Dr. Cullen is right, when he says, this pepper has the same qualities as the black, but in a weaker degree; the aromatic odour is rather faint, but its taste is pungent. The *Vytians* on the Coromandel coast prescribe it in infusion, mixed with a little honey, in catarrhal affections, when the chest is loaded with phlegm; the plant is the *cāttu-tirpali* of the Hort. Mal. (vii. p. 27. t. 14.). It is a perennial, a native of India, and also of Nepaul‡ and Java‖; "its *stem* is smooth, branched, slender, and scandent; *leaves* cordate, pointed, nerved, and of a deep green colour:

* Loureiro speaks highly of the medicinal virtues of long pepper: "calefaciens, stimulans, deobstruens" (Vide Flora Cochin-China, vol. i. p. 32.).

† See the London Dispensatory.

‡ See Kirkpatrick's Account of Nepaul, p. 205.

‖ An export from that island to Surat. See Sketches Civil and Military of Java, p. 207.

the *flowers* are small, in short, dense, terminal spikes, nearly cylindrical." *

There is a large variety of it sometimes met with in Lower India, called in Tamool *ana tipilie* (or elephant pepper), in Telinghoo it is *yeanigha pipulloo*, and in Sanscrit *gaja kunnie*.

The *root* of the long pepper is a favorite medicine of the Hindoos; it possesses the virtues of the berry, but in a weaker degree; and is prescribed by them in cases of palsy, tetanus, and apoplexy. It is termed in Sanscrit *granthika* ग्रन्थिक and *pippali-mūla* पिप्पलिमूल; in Tamool by the various names of *bengala modie*, *kandam-tipili*, and *tipili moolum*, in Hindoostanee it is *peeplamool*, in Persian *beik derucht filfil draz* بیخ درخت فلفل دراز and in Arabic فلفل مویه *filfil mooéh*. The Arabians consider it as cardiac.

CLXVI.

PETROLIUM. See OIL, ROCK.

CLXVII.

PHEASANT. تذرج *Tezurj* (Arab.) تدرو *Tedroo* (Pers.) *Faisan* (Fr.) *Fagiano* (It.)

PHASIANUS (Lin.)

Several species of this beautiful bird have been discovered amongst the more Northern tracts of the

* The Arabians, in the days of Avicenna, thought very highly of this medicine; he said of it, "concoquit digeritque cibum, et ventriculum roborat: libidinem concitat, zingiberis æquat efficacitatem." Canon. Med. lib. ii. tract ii. p. 106.

Indian continent; thanks to the interesting research of General Hardwicke, and other naturalists. I have already noticed (under the head of fowl) the *phasianus gallus*, which is the *gallus Indicus* of Leach, the *gallus sonnerati* of Temmink, or *wild cock* of Latham. For the following list of pheasants, distinctly so called, I am indebted to the kind attention of General Hardwicke:

1. *Phas. cruentus* (Hard.), *chelmiah* (Nepaulese), noticed also by Latham (Gen. Hist. No. 19.); it is a native of Nepal, and the snowy mountains.

2. A pheasant, which has only yet been examined by General Hardwicke, and of which he has a fine drawing; it is a native of Nepal, and called by the inhabitants *cheer*.

3. A pheasant, as yet only particularly examined by the same gentleman; it is a native of the *Almorah* mountains, and named by the inhabitants *pukraas*; the General has a drawing of the bird.

4. *Phasianus ferruginis* (Hard.). The native name of this species is not known; it is found amongst the snowy mountains, and in Nepal.

5. *Phas. satyrus* (Tem.). It is the horned pheasant of Latham, and is a native of *Sireenagur* and *Nepal*; it is of a reddish-brown colour, is a middle size, betwixt a common fowl and a turkey, and is distinguished by a callous blue substance, like a horn, which springs from behind each eye.

6. *Phas. impeyanus*. This most beautiful species is *moorghi zereen* مرغ زرین (Pers.); *moonal* (Hind.); it does not correspond with the *phas. pictus* (Lin.), but is, unquestionably, the *lophophorus refulgens* of Temmink, so named from the brilliancy of its plumage, being made a bird of a new genus in France, owing to its having a crest.

7. A pheasant only hitherto noticed by General Hardwicke, who has a drawing of the bird; it is the *jeelmeah* of the inhabitants of the snowy mountains, who bring it for sale to Nepal, where the flesh of it is considered as a remedy for jungle fever.

8. *Phas. leucomelanus* (Lin.). This is a lovely bird; it is the coloured pheasant of Latham; and is a native of Nepal, where it is named *kaledge*.

A gentleman sent lately from the Burmah country, for the museum of the Royal Asiatic Society, two stuffed *pheasants*: the one has purple wings, a brownish breast, a beautiful yellowish green neck, and a crest of dark reddish brown feathers; it is the *meenal* of the Burmese, a name very much resembling the Hindooie name of the *lophophorus refulgens*, above noticed, and of which it, no doubt, is a variety. The other sent, is called, by the Burmese, *singchinis*; it is also a most beautiful bird, being of a greyish mottled brown on the back, with small white spots all over it; the breast is a pale crimson, having, likewise, numerous white spots all over it, with this difference, that each spot on the breast is surrounded with a black margin; it has no crest, but a neck of bright crimson. It becomes a question how to name it.*

Pheasants, it will be seen by what has been just observed, cannot be procured in India in such quantity as to make them an object of much request as food. They are well known to be a great delicacy in Europe, and to be at once light and nourishing. The common pheasant *p. colchicus*, so named from having been originally found in *Colchis*, has, of late years, been ascertained to be a more hardy bird than

* General Hardwicke believes this to be the species known in Nepaul by the name of *mennŭr*.

it was, at one time, supposed to be, and thrives admirably in the gentlemen's parks of some of the most Northern counties of our island.*

CLXVIII.

PIGEON, DOMESTIC. *Prrā* புறா (Tam.) *Kabooter* کبوتر (Duk.) *Purewa* (Hindooie). *Pâwoorāi* (Tel.) *Merapatti* (Mal.) *Humam* حمام (Arab.) *Purewa* (Hind.) *Kabooter* کبوتر (Pers.) *Kapōta* कपोत (Sans.)

COLUMBA DOMESTICA (Lin.)

The natives of India, like us, consider pigeons, when taken as food, as stimulating and nourishing. The Arabians and Persians give them a place amongst their Aphrodisiacs, as they do also their eggs بيضهٔ کبوتر. There are many species to be met with, chiefly reared by the Mahometans.

What is called the *rock pigeon* on the Coromandel coast, is a variety of the columba œnas, or wild pigeon, beautifully speckled, and if killed young, and at certain seasons, when the small grains are on the ground, is excellent. The Tamools call it *maley pora*, or hill pigeon, the Persians *junglie kebooter*. The *parula* (Canarese), which Dr. F. Hamilton tells us is common in Canara, differs in almost nothing from the stock-dove or wild pigeon of England.

The turtle-dove (columba turtur) is also very common in the Indian woods, and has nearly the same

* In a manuscript volume at the India House, I find two species mentioned as Indian birds; the *p. argus?* and p. lineatus.

plaintive note as in Europe; it is small, of a blueish grey colour, but as food, it is dry and insipid. The Tamools call it *caat pora;* on the Malabar coast it is termed *ciangālli;* in Malay تاكوكور.

What is termed the *green pigeon* by the English in India, is a beautiful bird, found, at certain seasons, on the topmost branches of the banyan tree (ficus Indica), on the small fruit of which it feeds. It is of a bright green colour, with a short bill, in a slight degree curved, and has very short legs; it is, as food, the most delicate of all the pigeon kind. Where its proper place may be in natural history, whether a distinct species of the columba, or a variety of the col. turtur, has not, I believe, hitherto been fully ascertained. Its colour and form appear to come near those of the columba migratoria (Lin.), or Canada turtle, but it is much smaller, and has by no means the same habits. On the Malabar coast it is termed *ciula;* the Tamools call it *patchei pora*, or green pigeon.*

CLXIX.

PINE APPLE. *Anāsie pullum* കൈതച്ചക്ക (Tam.) *Anānās* اناناس (Duk.) *Nanas naneh* نانس نانيه (Mal.) *Pandang* (Macassar). *Pandang* (Bugis.) *Usi bangala*, also *Mangala* (Amboynese). *Koida Cheeka* (Malealie). *Ananas pundoo* (Tel.) *Kapatsjakka* (Rheede). *Anasi* (Cyng.) *Ananasso* (It.)

BROMELIA ANANAS (Lin.)

* In a manuscript at the India House, I find noticed as Indian birds, by Dr. F. Hamilton, the *c. nicobarica*, *c. lineata*, *c. hursala*. Ten species of columba are described by Dr. Horsfield as natives of Java. See Transactions Lin. Soc. vol. xiii.

Cl. and Ord. Hexandria Monogynia. Nat. Ord. Bromeliæ (Jüss.)

The pine apple grows in great abundance* in most parts of India, and, with a little care, large, and of an excellent quality; it is, certainly, a delicious fruit, and is too well known to require a description here. In hot weather it is most refreshing, but, owing to a certain pungency, it does not agree with every stomach; and not unfrequently produces cholera morbus.

There seems still to exist some doubt respecting the native country of the pine apple plant: it is, evidently, indigenous in Africa. It is common now in the Eastern islands: Mr. Crawford thinks it was first introduced there by the Portuguese, from America; how that may be, I know not, but this is well known, that the plant is growing *wild* in the woods of Ceylon; yet it is singular, that it is there called by the same name it has in America, or nearly so, *anasi*. The finest in the world are supposed to be the sugar-loaf pines of Brazil; and next to them, those of Montserrat. A very pleasant wine may be made with this fruit, and which Long, in his "History of Jamaica," says, is sometimes added to give zest to rum (see work, p. 793.). The pine apple was introduced into Bengal, in the reign of the Emperor Akbar, by the Portugese, who brought the seed from Malacca. In 1594, it was cultivated in China; brought, perhaps, thither from America, through the Philippine Islands: indeed, Acosta, in his Treatise on the Drugs and Medicines of the East Indies, tells

* Four varieties of the plant grow in Ceylon: the *queen red*, the *white*, the *sugar-loaf*, and the *stone*. See Mr. Moon's Catalogue of Ceylon Plants, p. 24.

us, that the fruit was brought from Santa Cruz to the West Indies, and that it was afterwards transplanted to the East Indies and China. It would appear to have been first described by Gonçalo Hernandez, who went to America in 1513. The plant grows in great abundance in the fields of Cochin-China, and is there called *tlai-thom* (Flor. Cochin-China, vol. i. p. 192.).

CLXX.

PLANTAIN. *Vālei pullum* (Tam.) *Maoz* موز (Duk.) *Kayla* (Hindooie). *Arittie pundoo* (Tel.) *Pesang* (Mal.) *Gadang* (Jav.) *Biyu* (Bali). *Chawuk* (Sundu) *Ounche* (Madagascar). *Koyo* (Banda). *Tema* (Ceram.) *Kehl khang* (Cyng.) *Kella* (Hind.) *Vellacoy* (Malealie). *Kadalī*, or *Kadala* कदली or कदल (Sans.) *Kail* (Mah.)

MUSA PARADISIACA (Lin.)

Cl. and Ord. Polygamia Monoecia. Nat. Ord. Musæ (Juss.)

The plantain is certainly one of the most delicious of all the Indian fruits, and one of the safest for such as have delicate stomachs, being entirely free from acidity; it is, moreover, very nourishing, and is always prescribed as food, by the Hindoo practitioners, for such as suffer from bile and heat of habit. It is improved in flavour by means of sweet milk and sugar, the rough covering being scraped off which is immediately under the skin. There are

many varieties* of the plantain†, differing in size and shape: the best are the *yellow*, commonly about four inches long; the *rajah*, not quite so long, and tipped with green at the end; and the *red*, which last is luscious, but has a somewhat perfumed taste. The *banana* (musa sapientum), some botanists, such as Loureiro and Gærtner, thought did not specifically differ from the musa paradisiaca; Willdenow, however, has made them different. The banana tree is, moreover, marked with purple spots; the fruit is shorter and rounder, with a softer pulp, of a more delicate taste: besides, in the m. parad. the male flowers are permanent; in the other, they are deciduous. The plantain and banana are the principal fruits of the Eastern islands; unripe, they are sliced and made into curry, when they taste like potatoes. Rumphius noticed no less than sixteen varieties of plantain and banana in the Molucca islands. The wild banana (musa textilis) grows in Mindanao, and the Philippine islands; it is remarkable for this, that the fibrous bark of it is made into cloth; it also affords material for cordage and cables, called in Eastern countries, manilla ropes.

CLXXI.

POISON NUT. *Yettie cottay* (Tam.) *Moostíghénza*, also *Musadi* (Tel.) *Culaka*, also *Kutaka*, also *Veshamoostibeejum* (Sans.) *Kodakaddooruatta* (Cyng.) *Koochla* کچلہ (Duk. and Hind.) *Khanék-*

* On Ceylon, where the tree is called *anawalu-kesel*, no fewer than ten varieties grow.

† The Tamool doctors prescribe the plantain [illegible] [illegible] (Tam.) to strengthen the body.

ulkelb خنانق الكلب (Arab.) *Jawuz alkie* جاوز القي (Serapio) *Ma-tseen* (Chin.)

STRYCHNOS NUX VOMICA (Lin.)

Cl. and Ord. Pentandria Monogynia. Nat. Ord. Luridæ. *Gemeiner Krahenauge* (Nom. Triv. Willd.).

The seeds of the fruit of the nux vomica, which is the goda-kaduru, also *divie kaduru*, of the Cyngalese, are reckoned amongst the most powerful vegetable poisons of the Hindoos, and so Loureiro declares them to be. The fruit itself is about the size of a small apple, is covered with a smooth, somewhat hard, shell, of a beautiful orange colour when ripe, and is filled with a soft, jelly-like, bitter, poisonous pulp. It is in this pulp that the seeds are immersed; they are usually from three to five in number, round, flattish, and about three quarters of an inch in diameter.

The *Vytians* are of opinion, that if the seeds are not taken in sufficient quantity to cause death, they will produce mental derangement: about as much of the powdered nut as will lie on a sixpence is, they say, sufficient to kill a dog; much less will cause the death of a man. When finely pounded, and intimately mixed with margosa* oil, the Tamools, like some of the German and Swedish physicians, consider it as a tonic and astringent, given in minute doses; they also recommend it in chronic rheumatism, and, blended with the white of an egg, they employ it as a repellent. Dr. Fleming informs us, that the natives of Upper Hindoostan are in the habit of adding the poison nuts in the process of distilling arrack, for the pernicious purpose of rendering the spirit more intoxicating.

* A fixed bitter oil prepared from the fruit of the melia azadirachta (Lin.).

The root of the tree, as well as that of the strychnos colubrina (lignum colubrinum), is amongst the remedies used in cases of snake bites, on the Malabar coast. This last mentioned tree is the *modira caniram* of Rheede (Hort. Mal. 7. 10. t. 5.); our article is the *caniram* of the same writer (Hort. Mal. 1. 67. t. 37.). In Malealie it is *canyara*.

The Arabians would seem to prescribe the root of the poison nut tree*, as the Hindoos do, in cases of snake bites; they call it *adrakie* ادراكي, which is, properly, a Syrian word. The seeds they place amongst their *Mokederrat* مخدرات (Narcotica). See an Arabic medical work, entitled *Shereh Asbab va Ilāmut* شرح اسباب و علامت, written by *Nafis Ben Aviez*, and dedicated to Sultan *Ulugh Beig Gūrgan*.

The tree is a native of Cochin-China, and called *cay-cu-chi* (Flor. Cochin-China, vol. i. p. 125.), also of Persia, and the nuts, by Elmore's† account, are an export from Mocha. It with three other species are growing in the botanical garden of Calcutta. The strychnos nux vomica is quite a common tree on the Coromandel coast. Dierbach in his Mat. Med. of Hippocrates, says, it may be the Στρυχνος of the Greeks. "It is of a middling size, with a rather crooked, but thickish *trunk*, and irregular branches; the *leaves* are opposite, on short petioles, ovate, shining, smooth on both sides, entire, three-five nerved, about four inches long, and from an inch to three inches broad; the *flowers* are small, greenish, white, and collected in small terminating umbels."

* Four species of strychnos grow in Ceylon. See Moon's Catalogue of Ceylon Plants, p. 16.

† See Elmore's Guide to the Trade of the Indian Seas, p. 268.

Several medical men of distinction * on the continent, have examined, with great accuracy, the deleterious qualities of the nux vomica: such as *Gesner*, *Heyde*, *de Wepfer*, *de Hillefeld*, *de Brunner*, and *Loss*, and compared them with those of the *upas tiente*. Alibert, in his "Nouveaux Elémens de Thérapeutique," has minutely described its effects on a dog, when given to the quantity of 30 grains; the animal neither barked nor moaned, but was carried off by convulsions. It does not appear, however, that the vomic nut, is equally poisonous to all animals. *Loss* assures us, that a hog may eat a considerable quantity of the nuts, without suffering in the smallest degree; and we know, that Desportes gave very large doses to a goat, without doing it any harm. The seeds of the nux vomica, as well as those of another species (strychnos ignatia), have been chemically examined by *Chevreul* and *Desportes*, who found, but I shall quote their words; "que cette substance est formée de malate de chaux, de gomme, d'une matière vegeto-animal, de matière améré, d'une huile fixé, d'une matière colorante jaune, et *probablement* d'amidon" (starch). Later examinations, however, by *Pelletier* and *Caventon*, have discovered in these seeds a peculiar principle which they have termed *strychnine* †; and which, like morphia, they found to possess alkaline properties. Mr. Brande tells us, that it is nearly soluble in

* Marcet, in his Memoir on the Action of Poisons on Vegetable Substances, informs us, that a bean plant, watered with a solution of extract of nux vomica, was killed in a day and a half. It has been supposed by some, that when taken by animals, the nux vomica poisoned by acting on the spinal marrow, while opium produced the same effect by acting directly on the brain itself. See Journal of Sciences, Literature, and the Arts, No. xxxix. p. 194.

† Loureiro informs us, that the seeds burnt till they have become black, may be safely given, and are useful in *fluor albus*. See vol. and page above quoted of Flora Cochin-China.

water; it dissolves in alcohol, and the solutions are intensely bitter (See his Manual of Chemistry, vol. iii. p. 73.).

By experiments, made by Magendie and Delile, it appears, that the vomic nut has a peculiar action on the spinal marrow, through the absorbent and sanguiferous system; and excites to motion the muscles to which that organ distributes nerves; it has, in consequence, been given with advantage in cases of paraplegia and hemiplegia, in doses of four grains of the extract*, every three hours, for a few days together. The same medicine has also been administered on the continent, with varying success, in mania, gout, epilepsy, hysteria, and dysentery.† In speaking of the vomic nut, I perceive Orfila, in his work on Poisons, has words to this effect (vol. ii. part 1. p. 330.): "The *upas tiente*, *nux vomica*, and *St. Ignace's* bean, are all powerful poisons on man and beast;" and we know, that Hoffman mentions the case of a girl of ten years old, who was killed by taking fifteen grains for a quartan ague. As far as I can judge from my own experience, its virtues, as a medicine, are rather equivocal; though it may safely be said, that it often affords relief both in gout and acute rheumatism, but the dose should not be more than three grains, repeated thrice daily; it inclines to sleep, producing a considerable degree of stupor.

* In speaking of *l'extrait alcoholique* of this nut, Roques, in his Phytographie Medicale, has these words: "l'extrait alcoholique est promptement delitere; suivant les experience de M. Bartelemi, six grains suffisent pour empoisonner un loup." Phytographie Medicale, vol. i. p. 281.

† Mr. Martin, of Stutton, in Suffolk, tells me, that in doses of five grains, repeated every four or five hours, he has known it prove most efficacious in dysentery.

As a remedy for the poisoning from the improper use of the nux vomica, Roques recommends emetics and purgatives, and a prompt administration of mucilaginous drinks (See Phytographie Medicale, vol. i. p. 287.).

CLXXII.

POMEGRANATE. *Magilam palam* மாதுளம் பழம் (Tam.) *Anār* انار (Pers. Hind. and Duk.) *Rānā* رانا (Arab.) also *Roman* رمان (Avicenna). *Dārim* (Hindooie). *Dādima pundoo* (Tel.) *Dādima* दाडिम (Sans.) *Dālema*, also *Daime* دايم (Mal.) *Melagrana* (It.) *Gangsalan* (Jav.) *Grenade* (Fr.) *Granatass felschale* (Ger.) *Pomo Granato* (It.) *Roma* (Port.) *Delunghedie* (Cyng.) *Daleemb* (Mah.) Ροδια (Mod. Gr.) *Nar* (Turkish).

PUNICA GRANATUM (Lin.)

Cl. and Ord. Icosandria Monogynia. Nat. Ord. Pomaceæ. *Gemeine Granate* (Nom. Triv. Willd.).

The juice of the ripe fruit of the pomegranate, which is contained in the red succulent pulp which covers the numerous small seeds, is slightly acid, and extremely pleasant to the taste, not unlike that of an orange; it is very refreshing, and well calculated to quench thirst in fevers. The Hindoo doctors prescribe it, combined with saffron, when the habit is preternaturally heated. The bark of the fruit, as well as the flowers, are useful astringents, and are commonly given by the natives in decoction, combined with powdered cloves, in such bowel affections

as are not accompanied with tenesmus. The bark of the root the Mahometan physicians administer in diseases requiring astringents, and, moreover, consider it as a perfect specific in cases of tape worm*: it is then given in decoction, prepared with two ounces of fresh bark, boiled in a pint and a half of water till but three quarters of a pint remain; of this, when cold, a wine-glassful may be drank every half hour, till the whole is taken. This quantity occasionally sickens the stomach a little, but seldom fails to destroy the worm, which is soon after passed.

The pomegranate tree, which, by Dierbach's† account, was the Ροα Σιδη of Hippocrates, is a native of the South of Europe, of Arabia, of Japan‡, Persia, and Barbary, but is now much cultivated in India and Ceylon. In the Indian Archipelago, Mr. Crawford tells us, it is only found in its cultivated state; the same gentleman adds, that by far the best pomegranates‖ he ever saw, were those brought into Upper India by the caravans from Eastern Persia. The punica granatum often rises to the height of eighteen feet, or more, sending out branches the whole length; the leaves are opposite, about three inches long, half an inch broad in the middle, pointed at each end, and of a light lucid green colour; the flowers come out at the end of the branches, singly, or three or four together; the fruit is pulpy, many-seeded, and is the size of an orange. Russel, in his

* A practice most probably borrowed from a perusal of the writings of their favourite author, Avicenna: "Radicis corticis ex vino lumbricos et ascaridas pellunt, sumantur autem vel per se, prout sunt, vel ipsorum decoctum." Vide Canon. Med. lib. ii. tract ii. p. 272.

† See Dierbach's Materia Medica of Hippocrates, chapter iv.

‡ Where it is called *sakaro* (Flor. Japon. p. 199.).

‖ Olivier, in his Travels in the Ottoman Empire, informs us (vol. ii. p. 9.), that those of Ghemlek are the finest in Turkey.

History of Aleppo (vol. ii. p. 85.), observes, that there are three varieties of the punica granatum, differing in the degree of acidity of the fruit. The Arabians and Persians hold the pomegranate fruit in great estimation; placing the juice amongst their Cardiacs *Mokewyat-dil* مقويات دل. The flowers of the male plant, گلنار *gulnar*, they rank amongst their Styptics *Manyatroafwüisshaluddum* مانعات رعاف والسال الدم; the blossoms amongst their *Modumilatkerough* مدملات قروح (Cicatrizantia); and the seeds, which they term حب الرمان Hubulrumān, amongst their Stomachics. See *Madeni Shefā* معدن شفا, or the Mine of Remedies, an Arabic work on medicine, by *Aby Ben Hussen*, of Bokhárá.

The ancients valued the pomegranate fruit as a stomachic: Celsus especially speaks of it amongst those things, "stomacho aptissima" (lib. ii. cap. xxiv.); and Pliny informs us, that its flower, called *balaustium*, "medicinis idoneus, et tingentibus vestibus, quarum color inde nomen accepit" (vide Hist. Nat. lib. xiii. cap. xix.); he describes five different sorts. Murray cautions us against the internal use of the bark of the fruit, in cases of hæmorrhage, as unsafe: "non satis fidus tutusque" (See Appar. Med. vol. iii. p. 264.). Sloane, in his Nat. Hist. of Jamaica, tells us, that the leaves of the pomegranate tree, beaten with oil of roses, applied to the head, cures its aching (See Hortus Jamaicensis, vol. ii. p. 89.). In China the pomegranate is of a fine quality, and is there called *sheh-lew*.

CLXXIII.

POMPHLET. *Véwāl meen* வெளாமீன் (Tam.) *Súndánāpoo chápoo* (Tel.) *Pátámēdi* (Cyng.) *Húlva māhié* حلوا ماهي (Duk.) *Aôly meen* (Malealie).

STROMATEUS PARU (La Cepede.)

This excellent fish is common on the Coromandel coast, and is much prized, both by the Europeans and natives, for its delicacy, being at once light and nourishing; and after the whiting, and perhaps the sole, may be considered as the safest of all fish for the sick. The pomphlet has the distinguishing characters of its genus; it is greatly compressed and oval, usually about eight or ten inches long, and not much less in breadth. Five species of stromateus have hitherto been ascertained, the s. *fiatola* has been longest known, and is remarkable for the brilliancy of its colours: it inhabits the Red Sea. The natives of India, generally speaking, are great fish-eaters; their medical men recommend them to such as have weak digestions and flatulence, in preference to all other food. Aghastier, however, in his *Vytia Anyouroo*, a celebrated Tamool medical sastrum, forbids the use of fish taken for the first meal in the morning, supposing it to be more proper after fatigue, or the usual bodily exertion during the day.

CLXXIV.

POPPY. *Casa casā* கசகசா (Tam.) also *Cassa cassa* (Tel.) *Post* (Hindooie). *Khushkhash* خشخاش (Arab. and Duk.) *Kooknār* کوکنار (Pers.) *Post* * (Hind, also Sans.) *Abin atta* (Cyng.) *Gaysagussa* (Can.) *Capsules des pavots blancs* (Fr.) *Die kopse des weissen mohns* (Ger.) Μηκων (Gr.) *Kes* (Japan.) *Ying-suh* (Chin.) *Pappavero* (It.)

PAPAVER SOMNIFERUM (Lin.)

Cl. and Ord. Polyandria Monogynia. Nat Ord. Rhoedæe (Lin.). *Garten Mohn* (Nom. Triv. Willd.).

The small, numerous, white seeds of the poppy are not considered as narcotic in Europe; but the Indians conceive them to be in a slight degree so; and the *Vytians*, under that notion, prescribe them in certain cases of diarrhœa: they also, occasionally, order a weak decoction of the dried capsule in those complaints which require sedatives. The Romans bruised the calix† of the poppy in wine, which they took to procure sleep; and we have already noticed, that Pliny affirmed, that the seeds were an excellent remedy in elephantiasis. The same seeds, however, were sometimes used by the ancients as food, or rather, as a seasoner of food.

* Post is also a name given, in the higher provinces of India, to an intoxicating liquor, prepared by beating the husks, or capsules, of the poppy, with jaggary and water.

† Vide Pliny's Histor. Nat. lib. xx. cap. xviii.

Hippocrates * believed them to be nourishing. The native Indians not unfrequently put them into sweet cakes, which are much eaten, by the higher ranks of Hindoos, at some of their festivals. Three species of papaver grow in the botanical garden at Calcutta; of our present article, two varieties, single and red single (See article Opium).

The oriental poppy (papaver orientale) is common in many parts of Arabia, and is called in that country *mameesa* ماميثا; it is the papaver hirsutissimum flore magno of Tournefort. The papaver somniferum, is the *reisjun* of the Japanese (Flor. Jap. p. 222.).

CLXXV.

POTASS, IMPURE CARBONATE OF.

Marra' ôoppoo மரஉப்பு (Tam.) *Kshāra-lâvana* क्षारलवण (Sans.) *Hindee loonoo* (Cyng.) *Manie ooppoo* (Tel.) *Jhār ká némuck* جهار کا نمک (Duk.) *Carbonate alkalinule de potasse* (Fr.) *Koloensaures kali* (Ger.)

CARBONAS POTASSÆ IMPURA (Lond.)

The more enlightened *Vytians* know how to prepare an alkaline salt from the ashes of burnt vegetables†, which they usually distinguish by the name of the plant from which it is obtained; such as

* Dierbach, in his Materia Med. of Hippocrates, observes, that opium appears to have been little, if at all, used by Hippocrates, which is the more strange, as it was known before his time, and great abuses afterwards committed by it.

† The plants in Europe which contain most potash, are fumitory, wormwood, vetches, beans, and cow-thistle. See Sir Humphry Davy's Elements of Agricultural Chemistry, p. 113.

valley elley ooppoo (the salt of the plantain leaf.) The *Vytians* consider it as diuretic, and prescribe it accordingly: it is the potash, or pearl-ashes of commerce.

The same description of men also know how to prepare from that salt, though in a clumsy way, a sort of subcarbonate of potass, which they consider as diuretic; they are also in the habit of making with it a kind of *travagum* or strong liquor, by adding to it certain hot seeds: this they also consider as diuretic.

The subcarbonate of potass has long been considered by European practitioners as diuretic, deobstruent, and antacid; and prescribed in doses of from gr. viii. to gr. xv. or more, in dropsies, gravel, and stone. The principal use of this salt, however, is for the formation of saline draughts, ℈i. of the salt, to ʒiv. of the lemon-juice. The dose of the solution of potass* (Lond.) may be from ten drops to a drachm, in any convenient vehicle; the dose of the aqua supercarbonatis potassæ (Edin.), which is tonic, diuretic, antacid, and lithontriptic, is about ʒviii. taken thrice daily.

In Travancore, the impure carbonate of potass is obtained by burning cocoa-nut leaves, and thence called *ténnam múttay chārum.* The people of that country, as well as the Cyngalese, who know not the use of impure carbonate of soda, *overmunnoo* (Tam.) for the purposes of bleaching and washing linen, employ the ashes of burnt vegetable, which serve the same end.

* Dr. Willan, in his work on Cutaneous Diseases (p. 141.), says, he found the best effects from the internal use of this solution, in lepra; it is given in chicken-broth, and Dr. Thomson observes, that it is most efficacious in the various species of psoriasis, which are consequent of acidity in the primæ viæ.

CLXXVI.

POTATOE, COMMON. *Wallarai kilangoo* வல்லாரைக்கிழங்கு (Tam.) *Ooralay gudda* (Tel.) *Rata innala* (Cyng.) *Pomme de terre* (Fr.) *Pome de terra* (It.)

SOLANUM TUBEROSUM (Lin.)

Cl. and Ord. Pentandria Monogynia. Nat. Ord. Luridæ.

Potatoes were first introduced into India from the Cape of Good Hope, and have, for many years past, been cultivated with great success in the Bengal provinces; and, lately, of an excellent quality, in several situations in the Mysore country; particularly at *Bangalore* and *Nundydroog*. They are not so large as the potatoes of Europe and America; but not inferior in mealiness and taste to any in the world: the round kind is chiefly cultivated.* For many years the Hindoos would not eat potatoes, but, latterly, they appear to have got over all their prejudices in this respect, and like them as much as they do the white yam, which they resemble greatly in taste.† There are several species of *yam:* the white dry yam is by far the best, and is the *yamskalung* of the Tamools; *perinvullie kélunghu* (Malealie); *rosakenda* (Cyng.). The plant is the dioscorea alata (Lin.), and is indigenous in the Indian islands,

* Of the genus solanum, no less than fourteen species grow in Ceylon.

† Thunberg informs us, that potatoes grow at *Nagasaki*, but of an inferior quality, and that they are reared with difficulty. Flora Japan, p. 92.

where, however, though the yam often grows to a large size, it is not so delicate a root as in India. In the Western parts of the Archipelago it is called *ubi;* in Ternate *ima;* in Macassar *lami;* in Amboyna *heli;* and in Banda *lutu.* Our name yam is evidently taken from the Portugese word igname. It would seem that no less than fifteen species of dioscorea were growing in the botanical garden of Calcutta, in 1814. The species *alata* is the *kamaaloo* of the Bengalese. What is termed the purple yam, dioscorea purpurea (Roxb.), many people prefer to the white yam; it is seldom so dry, however, and has, I think, a somewhat perfumed taste; it is called in Hindoostanie *lal-guranya-aloo.* Mr. Lunan*, of Jamaica, considers the purple yam as only a variety of the white yam; the stem, leaves, and manner of growth being exactly the same. On Ceylon the species *bulbifera* is common; it is the *katu-katsjil* of Rheede (Mal. vii. p. 69. t. 36.), and only differs from the d. alata in having stems even, in place of winged. Notwithstanding the great quantity of yams grown in India, such is the consumption, that they are brought to the Coromandel coast, for sale, from Acheen. For an account of the cultivation of yams in the Eastern islands, the reader may consult Rumphius (Herb. Amb. tom. v. p. 347.). What is called by the English in India *sweet-potatoe,* is a root about four or five inches long, and about two or more round; of a sweetish pleasant taste; in other respects resembling the potatoe, but seldom so dry; it is much sought after both by the Europeans and natives, and is considered as extremely nourishing. It is *sukkaray vullie kálúng* (Tam.); *ghénása* (Can.);

* See Hortus Jamaicensis, vol. ii. p. 309.

pendaloo پندالو (Duk.); *sukkara velligudda* (Tel.); *shukkerkund* شکرکند (Pers.); *castilian* (Amboynese); *batata* (Malay); *catela* (Jav. and Bali.). It is the convolvulus batatas of botanists, and is now quite common in the Eastern Archipelago; it would appear to be a native of both the Indies, China, Cochin-China, and New Zealand. We are told by Mr. Crawford, in his Indian Archipelago (vol. i. p. 373.), that there is a tuberous root much cultivated by the Javanese, and called by them *kantang*, which greatly resembles the common* potatoe, both in appearance and quality; it is, he says, the root of the ocimum tuberosum (Roxb.). The Tamool doctors consider the sweet potatoe as proper food when the natural heat of the body is diminished, and for such as have an aversion to victuals. See *Aghastier's Vytia Anyouroo*, a Tamool medical sastrum.

CLXXVII.

PRAWN. *Eerāl* ஈரால் (Tam.) *Jhenga* ঝিঙ্গা (Duk.) *Roielloo* (Tel.) *Issoo* (Cyng.) *Oodang* (Mal.) *Agni matsya* अग्निमत्स्य (Sans.) *Ingrha* (Hind.) *Gambero marino* (It.) وذغ (Mal.)

CANCER SERRATUS.

* The process of making brandy from the common potatoe has, of late years, been much adopted in Germany, and the Northern parts of Europe. In Sweden it has been recommended to the government by Berzelius, and in Denmark, by Oersted. The method of the last is said to be the best: the potatoes are exposed to the action of steam, which heats them more than boiling water, and facilitates their reduction to paste; to this paste, boiling water is added, previous to distillation, and also a little potash, rendered caustic by quick-lime. The Professor frees the potatoe brandy from its peculiar flavour by means of chlorate of potass, which makes it equal to the best wine-brandy.

The prawns in India are excellent, especially on the Coromandel coast. As food, they are considered, by the Hindoos, as stimulating and aphrodisiac, and to possess virtues in diabetes, which they, and perhaps with some reason, suppose to be often produced by an insufficient quantity of animal food. Prawns make a delicious currie.

CLXXVIII.

QUINCE SEED. *Béhdānā* பேஹ்தானா (Tam.) *Bédānā* بهدانه (Pers. and Arab.) Κυδονια (Gr.) *Hubalsufirjul* حب السفرجل (Arab.) *Békeekey beej* (Hindooie). *Semen de coignassier* (Fr.) *Quittenkorner* (Ger.) *Melacotogna* (It.) *Abeē* (Hind.) *Quincunx* (Fr.)

PYRUS CYDONIA (Lin.)

Cl. and Ord. Icosandria Pentagynia. Nat. Ord. Pomaceæ (Lin.) *Quitten Birne* (Nom Triv. Willd.)

The little of this article which is found in Indian bazars, is chiefly in use amongst the Mahometan practitioners, who occasionally order an infusion or decoction of the seed, as a demulcent in gonorrhœa, and in cases of tenesmus. It is brought to India from the sea-ports of the Persian Gulph.

The juice of the fruit when sour, اب ابي ترش, the Persians and Arabians place amongst their Stomachica ادويه هيضه; so they also do the apples themselves when fried ابي وسيب بريان كرده اب ابي ترش.

The seeds, which are inodorous, nearly insipid, ovate, angled, reddish brown, and coriaceous, are contained within the cells of the pear, which is of a

yellowish colour; when long chewed, they have a degree of bitterness; and are directed, by the London College, to be made into a decoction, recommended in aphthous affections.

Pliny informs us (lib. xv. cap. xi.), that the quince used, in his days, was brought from Crete; and hence, no doubt, as Dr. Thomson observes, its name μηλεα Κυδωνια taken from Cydon in that island. The *pyrus cydonia* is growing in the botanical garden of Calcutta; its Hindoostanie name *abee.* The *pyrus communis,* and p. *malus,* are now growing in Ceylon. The pyrus cydonia has been found wild on the shores of the Danube, and thrives well in England; it is described, botanically, in the London Dispensatory, p. 460. Thunberg found it growing in Japan, where it is called *umbats* (Flor. Japon., p. 200.)

CLXXIX.

RAISINS. *Dividātsipálávúttil* திவாட்சிபாலவுத்தில் (Tam.) *Velitcha moodika gheddie* (Cyng.) *Kishmish* كشمش (Hind. and Duk.) *Méwuz* مويز (Pers.) *Zébeeb* زبيب (Arab. and Mal.) *Raisin* (Fr.) *Uva passa* (It.) *Kishmish* (Hindooie).

VITIS VINIFERA (Lin.)

Cl. and Ord. Pentandria Monogynia. Nat. Ord. Hederaceæ (Lin.)

Though grapes are common in many parts of India, yet, I am not aware that raisins are ever prepared from them. The small kind called *kishmish,* and which are common in the bazars, are brought

from Persia, and are made from the Shiraz* grape. The natives of India employ them in their cooling and opening electuaries. The Persians consider them as emollient and suppurative, given to the quantity of ten direms for a dose; they have no seeds inside, and on that account are termed by them مویز انگور بیدانه *meŵez ungoor beydaneh.* The raisins of Europe are well known to be made from the varieties named the black-raisin grape and white-raisin grape; and are considered as more laxative than the fresh fruit.

The ripe fresh fruit is cooling and antiseptic; and is much prized by the natives of India, who conceive it to be highly useful in many diseases, especially in pulmonic affections. The juice of the grape, the Arabians call *umaseen* امعاسین; in Hindooie it is *drakhkaypānee;* in Persian اب غوره انگور *abghowra ungoor.* The vitis vinifera† is called in Sanscrit द्राक्षा *drāksha.* Six species of the genus were growing in the botanical garden of Calcutta, in 1814. It would appear that but two species are as yet growing in Ceylon, the vitis vinifera, and vitis Indica; the first known to the Cyngalese by the names of *mud-drap-palam, wœl-midi,* and *oowas.* See Moon's Catalogue of Ceylon Plants, p. 18.

CLXXX.

RENNET. *Puneermāyeh* پنیر مایه (Pers. Hind. and Duk.) *Unfekheh* انفخه (Arab.) *Chustah* (Hindooie).

* There are two sorts of Shiraz-wine, a red and white; the greatest quantity, by Morier's account, comes from the district of *Corbal,* near the village of *Bend Emir.* See his Journey through Persia, p. 74.

† Thunberg found grapes growing at Nagasaki, and the plant called by the Japanese *foto,* also *budo.* Flor. Jap. p. 103.

A knowledge of the preparation and use of rennet in Lower Hindoostan seems to be entirely confined to the higher classes of Mahometans; and there is this peculiarity in it, that it is the stomach of the kid that is employed for making it, and not that of the calf, which is used in Europe by the farmer for making cheese, and by the pharmacopolist for preparing whey. The Europeans in India, in making what they call cream-cheeses (and which are excellent), also employ the stomach of the kid, or a little lime-juice, which answers the same purpose. The Arabians suppose rennet to possess considerable medical properties, and to be of a deobstruent * and attenuant quality. They are in the habit of preparing it from the stomach of different animals; for instance, from that of the horse, which they call انفحة الفرس; the rennet of a hare, is پنیر مایه خرگوش; the rennet of a male kid of a mountain-goat, is انفحة الخشف; the rennet of a camel, is انفحة الجمل; that of a calf, is انفحة العجل; the rennet of the ewe, which the Arabians call unfekhehzan انفحه ضان, they place amongst their Cephalics. The rennet of the camel, which the Persians term پنیر مایه شتر *puneer mayeh shooter*, they place amongst their Aphrodisiacs. †

* See the Materia Medica of Noureddeen Mohammed Abdullah Shirazy, article *Unfekeh*.

† We are told by Pliny, that in his days the rennet of a rabbit was a medicine in dysentery. The rennet of the calf the Italians call *appiuola*.

CLXXXI.

RESIN, INDIAN, or DAMMER. *Coonghilium* குங்கிலியம் (Tam.) *Rall* رال (Arab.) *Dhoonā* دھونا (Hind.) *Googhilum* (Tel.) *Dammar* (Mal.) *Yakshadhūpa* यक्षधूप (Sans.) *Dummula* (Cyng.)

*Chloroxylon Dupada (Buch.)

Cl. and Ord. Enneandria Monogynia.

Of the substance usually termed dammar, and improperly, country rosin, in India there are three sorts to be met with in the bazars, called in Tamool *vullay coonghilium, carpoo coonghilium,* and *noray coonghilium,* or white, black, and coarse dammar. It much resembles the rosin obtained by distillation from the turpentine of the pinus sylvestris, both in appearance and natural qualities, and would seem to be a common product of many Asiatic countries. I perceive it is to be procured in great abundance in Sumatra, from a tree called by the Malays *canari* (dammara nigra legitima, Rumph.). In Java, Borneo*, Joanna, and several of the Soloo Islands, it is quite common, and a regular export to the continent of India. The coarse, or stony kind, the Malays call *damar batu,* and the Javanese *damar selo ;* the white, or fine sort, they term *damar-putch.*

We are told by Colonel Kirkpatrick, that the resin of a species of pine was an export from Nepaul; the tree yielding it he found growing in luxuriance,

* See Leyden's Sketches of Borneo, 7th vol. Transactions of the Batavian Society.

on the banks of the river *Bechicori*, the turpentine of which was used by the natives in religious ceremonies: it is called by them, *sulla* *, also *surendhool*, also *doobkee*.

The Mahometans employ dammar as we do resin and Burgundy pitch, in the composition of plasters; but its chief use appears to be as a pitch for the bottoms of vessels, for which purpose it finds a ready sale in the Bengal and China markets.

Dr. Buchanan (now Hamilton), in his interesting "Journey through Mysore, &c." informs us, that he found the tree which yields dammar, growing in the woods of Malabar†, and bestowed on it the scientific appellation of chloroxylon dupada; though I know well, that the greater part of the dammar met with in India, is an import from more Eastern countries. How far the chloroxylon dupada differs from the *dammara nigra legitima* of Rumphius, I regret that I am not now prepared to state; but the reader may refer to the work above mentioned, and compare what is there said of the chloroxylon *dupada*, with what Rumphius says of the *dammara nigra legitima* (tom. ii. lib. iii. cap. ix.), also with what Willdenow says of the *pinus dammara* (Spec. Plant. vol. iv. p. 303.); this last is the dammara alba of Rumph. (Amb. ii. p. 174. t. 57.). The Tamool name of the chloroxylon dupada (Buch.), is *chadacula*; in Malealie *payana*. (See articles Rosin, and Dammar, in another part of this work. See also article Turpentine, in this part and chapter.) Sonnerat tells us, that pitch is common at Pegu. Firtrees, by Turner's account, grow in Bootan. Dr.

* Hence the tree is called the sula pine. See Kirkpatrick's Account of Nepaul, pp. 33. and 205.

† Also in the mountainous tract which separates the Travancore country from the Madura district.

Buchanan saw at Ava a pine-tree, where, Symes informs us, it is called *toenyo*; and that the natives actually extract from it turpentine (See his Embasy to Ava, vol. ii. pp. 373, 374.); this, I should imagine, can be no other than the *pinus dammara* (Willd.), or the *dammara alba* (Rumph.).

CLXXXII.

RICE. *Arisee* அரிசி (Tam.) *Chawl* چاول (Hind. and Duk.) *Aruz* ارز (Arab.) *Barinje* برنج (Pers.) *Beeum* (Tel.) *Chawul* (Hindooie). *Bras* (Mal.) *Vrīhi* व्रीहि (Sans.) *Riz* (Fr.) *Arros* (Port.) *Riis* (Dan.) *Motsj*, also *Gome* (Japan.) *Tandool* (Mah.) *Riso* (It.) *Ko* (Jap.) *Lua* (Coch. Chin.)

ORYZA SATIVA (Lin.)

Cl. and Ord. Hexandria Monogynia. Nat. Ord. Gramina.

This excellent grain is too well known to require a minute description here. It is cultivated in every Eastern and Asiatic country; in the West Indies; in many parts of America; and also in some of the most Southern tracts of Europe. It is a light, wholesome grain; but, I should be inclined to think, contains much less of the nutritive principle than wheat. Rice having become decayed, constituting what has been called the *oose* rice in Bengal*, Dr. Tytler supposed to be the chief cause of the spasmodic cholera; an opinion successfully combated.

The different sorts of rice cultivated in India, are

* See Mr. W. Scot's admirable Report on the Epidemic Cholera, as it appeared on the territories belonging to the Madras Establishment, p. 43.

almost endless; the author of the *Hortus Bengalensis* informs us, that on the Coromandel coast alone he found upwards of forty, well known to the farmers: of all these, simply speaking, what are termed the *white* and *red* are the best. The various kinds of rice have commonly been called varieties, but Dr. Buchanan, in his "Journey through Mysore," &c. (vol. i. pp. 85, 86.), has given it as his opinion, that many of them are different species of the oryza, as distinct as the different kinds of barley that are cultivated in Europe.

In Southern India, three modes of cultivating this grain are pursued: 1st. the seed is sown dry in the field; this mode is called in Canarese *bara butta*. 2nd. It is made to vegetate before it is sown, and the field when fitted to receive it, is reduced to a puddle; this mode is called *mola-battu* (Can.). The third mode is, when the seed is sown thick on a small piece of ground, and when the plant is a foot high, it is transplanted; this is called *nati*. Some account of the manures employed in cultivating rice will be given in another part of this work. The rice-plant would appear, by Mr. Crawfurd's* account, to be indigenous in the islands forming the Indian Archipelago; that gentleman mentions with his usual accuracy, the different descriptions of this grain reared in those countries; the most singular of which is the species termed by the Malays *pulut*, and by the Javanese *kattan*, and which appears to be the oryza glutinosa of Rumphius: it is never used as bread, but commonly prepared as a sweet-meat.

What is called *hill-rice* in Lower India, is that which is raised in upland, arable lands; in short,

* See Crawfurd's Indian Archipelago, vol. i. p. 358.

such lands, as from their locality cannot be subjected to the process of flooding. These, in Malabar, are manured* with ashes and cow-dung, like other dry grain fields; the *hill-rice* itself is called in Malealie *modun*, and is a smaller and less valuable article than the common rice. The *hill-rice* does not appear to be known in Bengal: it is much cultivated in the Eastern islands. Rice, in the husk, is termed in Tamul, also in Malay, *paddie*, in Dukhanie *dáhn* دهان, in Persian *shalie* شالي. In Tellingoo the plant is *oori*, the grain in the husk *oodloo*, and the rice itself *beeum*.

The chief distinction, with regard to appearance and taste, betwixt the Bengal and coast rice, would seem to be, that the former is whiter, boils dryer, and is more delicate in flavour; it is commonly, on those accounts, preferred by the people of rank, to eat with curry: and the Patna is deemed the best. But the native Indians of both coasts do not like the rice of the higher provinces; they call it dry and insipid, and say it is apt to bring on constipation.

In a medicinal point of view, rice may be said to be of a less aperient quality than any other grain, and is therefore invariably ordered as the safest and best food in all dysenteric complaints; for which purpose, in the form of gruel, it is excellent. The *Vytians* are very particular as to the kind of rice they prescribe, supposing the rices of different crops to have very different effects. The two great crops of rice in Southern India, I mean for flooded rice, are the *caar* and *soombah* crops; the last of which is also called the *peshānum* crop: it is reapt in

* The rice reared on marshy land, or rather, that rice which requires being flooded, is usually manured with leaves and branches of various trees.

the months of February and March. The produce of this crop, Aghastier informs us, in his *Vytia Anyouroo*, is peculiarly strengthening to the body; he adds, that "*the very sight of it induces appetite, in fact it is worthy of being served up to the gods.*" The produce, on the other hand, of the *caar* crop, which is reapt in October, he considers as of a different quality; this he says, "*will bring on indigestion, flatulency, eruptions on the skin, and other evils;*" he finishes by saying, that "*a person had better beg his bread, than eat the rice of the caar crop.*" The fact is that this rice usually is of an inferior sort, but certainly not at all unwholesome.

In the *Pádúrtásindāumanie*, a Tamool sastrum, exclusively written on diet and regimen, I perceive some strong cautions against using rice that had been boiled over night, and allowed to remain in cold water for hours before it was eaten. This, it is said, will "*bring on hypochondriasis, and however pleasant it may be to the taste, is often productive of bad consequences to the body, inducing drowsiness and stupor.*" It would appear by Pliny, that in his day, rice was much used in Italy; "Italica maxime quidam oryza gaudent, ex qua ptisanam conficiunt, quam reliqui mortales ex hordio" (Nat. Hist. lib. xviii. cap. vii.). Celsus says of rice, "oryza imbecillissimis adnumerari potest, crassiorem pituitam fecit, stomachico idonea est, sorbitionem præstat in phthisi. See book ii. cap. xviii., also book ii. cap. xxiii., book iii. cap. xxii.

In Moon's Catalogue of Ceylon Plants, we find no less than one hundred and sixty-one varieties of the oryza sativa enumerated, as growing in Ceylon; the common Cyngalese name for this annual is *Ooru-wee*.

CLXXXIII.

RHUBARB. *Variātoo kálung* வரியாதது ககிழங்கு (Tam.) *Réwund chini* ريوند چيني (Duk.) *Rawend* راوند (Arab.) *Reywand* ريوند (Pers.) *Ruibarbo* (Port.) *Rhubarber* (Dut.) *Rhubarb* (Fr.) *Ta hoam* (Coch. Chin.) *Ta-hwang* (Chin.) *Reywun-chinie* (Hindooie). *Reubarbaro* (It.)

RHEUM PALMATUM (Lin.)
RHEUM UNDULATUM (Lin.)

Cl. and Ord. Enneandria Trigynia. Nat. Ord. Holoraceæ (Lin.)

It is well kown that three varieties of rhubarb are to be met with in the shops, the Russian, Turkey, and the Indian, or Chinese; the last I conceive to be the rheum palmatum, and is what is commonly found in Indian bazars. It is brought from China, where it grows in the province of *Shénsee.* * It is also a native of Tartary, Thibet †, and Bootan; and would appear to be the produce of the hardiest of all the species of this valuable plant. It may be known from other rhubarbs by its strong odour, and somewhat nauseous taste; it breaks smoother, and affords a powder of a redder shade. There is sometimes to be procured on the Malabar coast, an inferior sort of rhubarb, called by the Mahometans *rewund esbi,* and *rewund khuttāi;* which is, perhaps,

* Loureiro says: "In provinciis Borealibus imperii Chinensis habitat, intra, et extra murum celebrem" (Flora Cochin-Chin. vol. i. p. 255.).

† See Tavernier's Indian Travels, part ii. book ii. chap. xv.

that kind mentioned by D'Herbelot, as the produce of Khorasan; it is coarse and very nauseous.

Rhubarb is not always to be purchased in the interior parts of the Indian Peninsula, and rarely of a good quality; which is strange considering the value of the drug, and that it could be brought with so little trouble from China. The *Hakeems* (Mahometan doctors) are better acquainted with it than the Hindoo practitioners; which is no doubt owing to the knowledge the former have of Arabic and Persian books, in which they find its good qualities properly appreciated. It is one of those articles first introduced into practice by the Arabians*; and it is a fact, that no mention is made of it by either Pliny or Celsus.†

Dr. Thomson has very properly said, that rhubarb is stomachic, astringent, or purgative, according to the dose; hence its use in dyspepsia, hypochondriasis, and diarrhœas. In the first mentioned complaint, it is well to combine it with ginger, soda, or bitters, according to circumstances. ℈i. or ʒss. of the powder will open the bowels freely; in smaller doses from gr. vi. to gr. x. it is usually given as a stomachic; and is also of the *greatest service* in those bowel affections of children which are so troublesome during dentition: in these cases gr. vi. of rhubarb, with four of magnesia, given night and morning, for two, three, or four days together, often prevent serious ailments, and avert much irritation in the bowels, till such time as the tooth

* See Histoire de la Medicine, par Le Clerc, p. 771.

† In the days of Avicenna its virtues, however, were fully appreciated: "Dolores internos lenit, singultum sedat, *extenuat lienum*; diarrhœæ, torminibus, dysenteriæ, renum, vesicæ, uteri doloribus auxiliatur, diuturnis febribus opitulatur." Canon. lib. ii. tract ii.

comes through the gum: the dose of the tincture of rhubarb is from ʒij. to ℥i.

We are told by Mr. Barton *, that the root of the convolvulus panduratus, is in its operation somewhat like that of rhubarb; its dose must be a little larger than that of jalap: it is mildly cathartic.

The following are the component parts of the finest kind of Turkey rhubarb:

Water	8·2
Gum	31·0
Resin	10·0
Extract, tan, and gallic acid	26·0
Phosphate of lime	2·0
Malate of lime	6·5
Woody fibre	16·3
	100·0

See Quarterly Journal of Science and the Arts, x. 291.

The species *compactum* and *palmatum* are growing in the botanical garden of Calcutta. I shall conclude what I have to say of rhubarb by observing, that I have found it only essentially useful in dysentery in India, when combined with ipecacuanha, gr. viii. of the first, and gr. vi. of the last, made into pills, and taken in the twenty-four hours; the ipecacuanha appears to act, by exciting a kind of antiperistaltic action, and by exciting diaphoresis.

* See Barton's Materia Medica of the United States (vol. i. p. 252.).

CLXXXIV.

ROSE. *Goolābu-poo* ரோஜாபூ (Tam.) *Goolābka phool* گلاب کا پھول (Duk.) *Wúrd* ورد (Arab.) *Gúl* گل (Pers.) *Hoa-houng-tau* (Coch. Chin.) *Mei-kwe-hwa* (Chin.) *Māwár* ماوار (Mal.) *Gool-āb* (Hind. and Beng.) *Rose a cent feuilles* (Fr.) *Blassen rose* (Ger.) *Rosa* (It.)

ROSA CENTIFOLIA (Lin.)

Cl. and Ord. Icosandria Polygynia. Nat. Ord. Senticosæ (Lin.)

With a little care, roses of a delightful fragrance grow in the lower provinces of India; though not in sufficient quantity to make the distillation of rose water an object. It is, however, I am informed, made in the higher provinces of Hindoostan, but most of what is used in India comes from Persia; it is the *Máulwurd* ماءالورد of the Arabians, who place it amongst their *Cephalics*. There are several different kinds of roses to be met with in India, but the rosa centifolia is the most prized; and is, I believe, the true *gul* گل of *Hafiz*, who, with *Sādy* and *Jāmy* have celebrated it in many of their poems: the first, in speaking of it, says,

کنونکه در چمن امد کل از عدم بوجود
بنفشه در قدم او نهاد سر بسجود

Thus paraphrased by Mr. Nott:—

When the young rose, in crimson gay,
Expands her beauties to the day,
And foliage fresh her leafless boughs o'erspread;
In homage to her sovereign power,
Bright regent of each subject flower,
Low at her feet the violet bends her head.

But no Eastern poet, I shall be bold to say, has been half so eloquent on the subject of the rose, as the Rev. Mr. E. Smedley*, who, in his "Fables of my Garden," has given us some stanzas on that lovely flower, which are even more beautiful than the flower itself. I quote the two last,—

In spring I watch its opening hue,
Fair promise of a leaf to be;
And long before they burst to view,
Its swelling folds have charms for me.
I count each bud with silent hope,
Which summer ripens into flower;
And when the glowing petals ope,
I treasure them within my bower.

Scarce can the enamour'd nightingale,
More closely woo it for his bride;
The bird which in the eastern tale,
Sits warbling music by its side.
I love it in its earliest blade,
I love it in its richest bloom;
And when its living blushes fade,
I court its memory in perfume!!

The rosa centifolia, which is, according to Dierbach†, the Ῥόδον of Hippocrates, and is the گل سرخ of the Persians, is that chiefly employed in making both rose water and uttir. Those of the province of *Kerman* are of a peculiar freshness. Kæmpher

* Author of Prescience.
† See Dierbach's Materia Medica of Hippocrates, chapter iv.

in his *Amœnitates Exotica* (p. 374.), speaks highly of those of Shiraz, where, it would appear, that a great quantity of the essential oil, or عرق is prepared; nor are the roses and uttir of Cashmire held in less estimation in the East, as is particularly noticed by the excellent Monsieur Langlés in his "*Récherches, sur la Découverte de l'Essence de Rose*" (p. 13.) The same writer informs us, that the *uttir* drawn from the roses of Syria and the provinces of Barbary is of an inferior quality to the Persian. The method of making the perfume so called, he moreover says, was first discovered in 1020 of the Hejira, by the mother of Nour-djihan Beygum. Captain M. Kinneir in his Geographical Memoir of Persia observes, that in the vicinity of Bussora whole fields of roses are cultivated (p. 291.), for the purpose of making rose water.

In India the petals of the rosa centifolia are considered as a good laxative for infants, given in the form of a syrup. Rose water is much employed as a perfume, also for softening the flavour of tobacco in smoking, and in preparing collyria. I have seldom met with the rosa gallica* in India, but it is more common in the higher provinces, and in Persia, where it is called *gul súrkh* گل سرخ. The petals of this species make the best rose confection in Europe; they are also used in making the infusion and honey. For the syrup, the rosa centifolia is preferred: this rose in Sanscrit is *tarani.*

The following are the species of roses, natives of India, Bootan, and Nepaul, which were growing in the botanical garden of Calcutta in 1814.: 1. rosa

* It is common at Japan, in the neighbourhood of Dezima (Flor. Japon., p. 214.). Forskahl in his Mat. Med. Kahirina tells us, that it is the Βαυϊδλ of the modern Greeks.

Indica * (Roxb.); 2. rosa glandulifera (Roxb.), the Bengalie name of which is *Shewuti;* and, 3. the rosa involucrata (Roxb.), a native of Bootan. But three species appear to grow in Ceylon, the rosa Indica (kappe-sewuwandi-mal), rosa semperflorens, and rosa banksiæ.

The powder of the red rose petals in doses of ʒi. is purgative. That of the root of the rosa canina †, has been recommended in hydrophobia. The leaves of the species eglantaria, are a good substitute for tea. The uttir of the Levant and Tunis is prepared from the rosa sempervirens. The petals of the rosa damascena are the most purgative. The rosa mollissima is cultivated on account of its large edible fruit.‡ In speaking of the rose, Celsus says, "simul reprimit, refrigerat et discutit" (lib. ii. cap. xxxiii., lib. v. cap. xi.).

The Persians and Arabians place rose seeds amongst their *Mufuttetat* مفتتات (Lithontriptica); red roses گل سرخ *gul surkh*, they class amongst their carminatives, cephalics, and tonics. The reader is referred to a Persian work, entitled اختیار بدیع واغراض الطب *Ikhtiari Budia va Aghrāzy-āl Tibb*, for many particulars regarding the virtues of roses, also to Avicenna. See Canon. Med. lib. ii. tract ii. p. 114.

* A native of Cochin-China, where it is called *hoa-houng-coung-gāi*. Flor. Cochin-Chin. vol. i. p. 323.

† This is the *julnisrin* جلنسرین of the Arabians, also the *nesrin;* in Hindoostanie it is *sowtee*, or *wurd chinie;* it is the *foosen* of the Japanese, and grows in Dezima (Flor. Japon. p. 214.)

‡ See Mr. Gray's Supplement to the Pharmacopœia.

CLXXXV.

ROSEMARY. *Tay-duong-choi* (Cochin-Chin.) *Romarin* (Fr.) *Gemeiner rosmarin* (Ger.) *Rosmarino* (It.) اخضر حصالبان *Hásalban achsir* (Arab.) Δενδρολι βανο (Mod. Gr.)

Cl. and Ord. Diandria Monogynia. Nat. Ord. Labiatæ (Juss.)

Having learnt from Loureiro's Flora Cochin-Chinensis, that this plant grows in China and Cochin-China, I have thought proper to give it a place here. It has long been highly prized in Europe, and the Greeks are supposed to have known it under the name of Λιβανωτις, according to Disoscorides; though there may still be doubts if that was the same plant. Pliny simply observes, speaking of libanotis: "the plant is considered when it is one year old, as an excellent stomachic (vide Nat. Hist. lib. xix. cap. xii.) It grows now in Spain, Italy, Greece, and the Northern tracts of Africa; also, by Loiseleur Deslongchamps' account, on the lower hills of Languedoc and Provence; "it is an erect evergreen, seldom rising higher than five feet, with opposite leaves, which are nearly sessile, about two inches long, and a quarter of an inch broad, dark green above, and greyish underneath; the flowers are placed on axillary, leafy branches, having a corolla, which is ringent, of a pale blue colour, with sometimes white and purple spots and dots." There is a wild sort of rosemary, with much larger flowers, and of a deeper colour.

Both the leaves and flowers have a very grateful and aromatic odour, with a pungent and slightly bitter taste, depending on an essential oil, Dr. Thomson says, combined with camphor; this corresponds with Kunckel's * opinion: and we know that *Proust* found 10 parts out of 100 to be camphor in this plant.

Rosemary has had particular virtues ascribed to it, as a stimulant and cephalic; and I believe its good effects in nervous headache, and hysteric affections will not be doubted, given in powder or infusion, the first is the best mode, in doses from gr. x. to ʒi.: there is also an oil and spirit prepared with it. With regard to its uses in China, Loureiro merely says, "*cephalica, tonica, nervina.*" The plant is an ingredient in the famous "*Eau de la reine d'Hongrie,*" which was prepared by the queen herself, and by which she is said to have cured the gout.

Rosemary as a medicine, however, has not of late years been much employed in England. The medical writers on the continent think more highly of it. Alibert† says, it is beneficial in the glandular enlargements of children, "*et très avantageuse dans la chlorose.*" The Italians make use of the plant, to give a pleasant *aroma* to rice; and the German surgeons prescribe it as an external application (in infusion), to improve the growth of the hair, and give it a glossy and healthy appearance; a use I find lately adopted in England with success. To conclude, rosemary grows in abundance in Egypt, near Cairo, where it حصالبا اخضر is greatly esteemed as a cephalic.

* See Virey's Histoire Naturelle des Medicamens, p. 175.

† See Nouveaux Elémens de Thérapeutique, vol. ii. p. 128. French edition.

CLXXXVI.

RUE, COMMON. *Arooda* அறுகு (Tam.) سداب (Arab. Pers. and Duk.) *Arooda* (Cyng.) *Suddāb* (Mah.) *Saturee* (Hindooie). *Sádsá* സാദസ (Mal.) *Suddapoo akoo* (Tel.) *Brāhmi* ब्राह्मी also *Sōmalatā* सोमलता (Sans.) *Inghoo* (Jav.) also *Sendib* سندب (Arab.) *Rue sauvage* (Fr.) *Raute* (Ger.) *Ruta* (Russ.) *Ruta de derpesado* (Span.) *Mats-kase-so* (Japan.) *Ruta* (It.)

RUTA GRAVEOLENS (Lin.)

Cl. and Ord. Decandria Monogynia. Nat. Ord. Multisilique (Lin.)

The glaucous, pulpy, dotted, doubly pinnate leaves of the ruta graveolens, are well known to have a peculiar strong odour, and a bitter and nauseous taste; possessing considerable acrimony in their fresh state, but which is a good deal dissipated on drying.

The leaves dried and burnt are used by the natives of India for the purpose of fumigating young children, suffering from catarrh; they are also used fresh bruised, and mixed with arrack, as an external remedy in the first stages of paralytic affections.

The same leaves, dried in the shade, and powdered, the Hindoo doctors prescribe, in conjunction with aromatics, in cases of dyspepsia; and suppose them, when given together with camphor, and the sugar of the palmyra toddy, to be inimical to the *fœtus in utero*, an opinion which was also entertained by Dioscorides.

The modern Greeks call the plant by the name of Ηηγανον δυσωδες, and consider it as a valuable medicine in epilepsy. * The Arabians† class rue amongst their *Attenuentia* ملطفات, and *Vesicatoria* مقرحات, also amongst their *Stimulantia* مدرات.

Rue was held in high estimation by the ancients, and was a principal ingredient of the celebrated antidote of Mithridates king of Pontus. Pliny notices it in several parts of his Natural History, and calls it one of the best medicinal herbs; but informs us, at the same time, that the juice of it taken in considerable quantity is a poison, especially that of those plants which grow near the river Aliacmon, and in Galatia. Boerhaave extolls highly the virtues of rue, particularly in promoting perspiration. In the *Schola Salerni* we have the followlng lines:

> "Ruta facit castum; dat lumen, et ingerit astum,
> "Cocta facit ruta, de pulicibus loca tuta."

Amongst many other good qualities, Celsus notices of rue, "urinam movet, sensus excitat, purgat, mollit; cum allio, recte miscetur ad scorpionis ictum" (See books ii. v.) Hippocrates considered rue as resolvent and diuretic, and notices it in his chapter on female diseases. European practitioners believe rue, which old English writers called *herb grace*, to be antispasmodic, stimulant, and emmenagogue, and order it occasionally in hysteria and flatulent colic: a strong infusion of it exhibited per anum, relieves the convulsions of infants, arising from

* See Michel's Della Corciresse Flora, p. 52.

† Avicenna, who notices three species, imagined that rue had powers as an antidote against poisons: "Venenis resistet; itaque qui timet et suspicatur venenem sibi exhibendum, aut mordendum se a venenatis, seminis drahman cum foliis ex vino bibat." Vide Canon. Med. lib. ii. tract ii. p. 222.

flatulence. On the continent it is a medicine of more note than with us. Alibert* says of it, "Cette plante a un grande action sur le système nerveux, et particulièrement sur le système uterin. Beaucoup de femmes en prennent dans les menstrues laborieuses.†" The dose of the powdered leaves, from grs. x. to ʒiss. or more, twice or thrice daily.‡ The plant is an ever-green, perennial, a native § of the Southern tracts of Europe, and also of Africa, where it was found by *Sweertius*, and called ruta Africana maxima (Sweert. Hort. 24.). What of it is met with in India is brought from the Arabian coast, where it is sold under the names of *suddab* سداب and *sendib* سندب. Thunberg found it in Japan growing near *Jedo*, and called by the Japanese *Mats-kase-so* (Flor. Japon. p. 180.).

I conclude this article by the following most singular quotation from a celebrated German author, as cited by Murray (Appar. Med. vol. iii. p. 116.). "In debilitate visus sæpe prodest halitus hominis sani et integri oris, qui rutam masticavit, oculo alterius aperto adspirandus, in ea praesertim oculorum caligine, que ex lectione assidua originem traxit"!!!

* See his Nouveaux Elémens de Thérapeutique, vol. ii. p. 550.

† Roques, however, recommends great caution in the use of rue, particularly when there is any considerable degree of irritation or plethora (See Phytographie Medicale, vol. ii. p. 235.).

‡ The officinal preparations of it are, an oil, and extract; of the latter, *Alibert* says, that prepared with water is more abundant than with alcohol, but the last more active and acrid.

§ It is growing in the botanical garden of Calcutta, introduced from Europe and Asia in 1800. It is also growing now on Ceylon. A species of wild rue is a medicine amongst the Moguls, and is called in Arabic السن *alsun*, and in Persian اسبند *asbund*.

CLXXXVII.

SAFFRON. *Khoongoomapoo* குங்குமப்பூ (Tam.) *Zafran* زعفران (Arab. and Duk.) *Keysur* (Hindooie). *Khoonkoomapoohoo* (Tel.) *Abeer* عبير (Pers.) *Safaron* سفارون (Mal.) *Khohoon* (Cyng.) *Acafrao* (Port.) *Safran* (Fr.) *Zafferano* (It.) *Safran* (Ger.) *Kāsmīrajanmā* काश्मीरजन्मा (Sans.) also *Kunkuma* कुंकुम (Sans.) Κρόκος (Gr.)

CROCUS SATIVUS (Lin.)

Cl. and Ord. Triandria Monogynia. Nat. Ord. Ensatæ.

The saffron of the shops is prepared from the stigmas, with a proportion of the style, of the flowers of the crocus sativus, a plant which thrives well in England, and is a native of the Southern parts of Europe and of Asia. When of good quality, it has a sweetish, penetrating, diffusive odour, its taste is a little bitter, united with a certain degree of warmth and pungency, its colour a deep red.

The Hindoo doctors prescribe saffron in nervous affections, unattended with vertigo, and where there is no disposition to apoplexy; they also believe it to have considerable virtue in melancholia, hysteric depressions, and *kistnah doshum* (typhus fever). To women soon after the pains of childbirth, an infusion of saffron is frequently administered by the Tamool midwives, to prevent fever, to support the spirits, and gently to assist in carrying off the lochia. This medicine is besides used by the Indian practitioners,

as an external application in ophthalmia, when mixed with a small portion of pounded *kadukāi* (Chebulic myrobolan), and lime-juice, and applied round the eye and close to it.

The saffron procured from Asiatic countries is of an inferior quality to what we see in Europe; being often dry and deficient in odour. It is brought to India from the sea-ports of the Red Sea*, from Persia†, and in considerable quantity from Cashmere: hence its Sanscrit name. The Arabians‡ place saffron amongst their *Mosebetát* مسبتات (Hypnotica), *Mokewyat-dil* مقويات دل (Cardiaca), and *Mufettehat* مفتحات (Deobstruentia). The reader will find its virtues fully discussed in a Persian work, entitled *Krabidinie Massumy* قرابدين معصومي, a Treatise on Medicine, by Massum Ben Ibrahim Shirazy, A.D. 1649.

Few things are more subject to adulteration§ than saffron, a fact which, I find, was noticed by Pliny, in whose days it would appear that the best grew in Cilicia, on a mountain named Carcyrus. The Greeks called the plant Κρόκος; its English name is evidently

* A great quantity of saffron grows in Egypt; the best in the vicinity of Cairo: about 1,800,000 pounds used formerly to be annually prepared in that country. See Niebhur's Travels in Arabia, vol. i. p. 96.

† Captain M. Kinneir, in his valuable Geographical Memoir of Persia, informs us, that saffron is a staple export from Herat, a town in the province of Khorasan. See his work, p. 182.

‡ Avicenna says of saffron, "roborat cor et exhilarat; sed cephalalgiam inducit, capitique officit; venerem stimulat, urinam movet." Vide Canon. Med. lib. ii. tract ii. p. 123.

§ It is often adulterated, Roques informs us, with the flowers of the carthamus tinctorius; the same intelligent writer says of saffron, that when taken in moderation, either in food or as medicine, it gives tone to the stomach, strengthens the circulation, and favours the functions of the skin; but if taken in an overdose, it acts as a narcotic poison, and injures the brain and nerves. See Phytographie Medicale, vol. i. p. 132.

borrowed from the Arabic. To enumerate all the good qualities, which have been at different times ascribed to saffron, would occupy too much room here; it has been supposed to promote the eruption of the small pox, keep off sea-sickness, relieve palpitation at the heart, induce sleep, &c. Galen*, however, thought less favourably of it, and believed that when too liberally taken, it might destroy the intellect. Celsus† is the only author I am aware of who considered it as having a purgative quality.

European practioners have considered saffron as stimulant and antispasmodic; but from the experiments of Dr. Alexander, its powers do not appear to be considerable. Boerhaave had some singular notions respecting saffron, and supposed it to have the effect of dissolving the blood when taken to excess; but if properly administered, he conceived it to be a valuable aromatic, pectoral, anodyne, hypnotic and alexiteric; adding, that when applied to the forehead it sometimes removed phrenzy. Professor *Ungarelli*‡ expresses his firm belief in its debilitating quality; and Murray thinks that taken in an overdose, it powerfully excites the uterus. Dr. Thornton informs us, that he has often known the fits of infants removed by the syrup of saffron. Orfila§ in his work on poisons, tells us, that a strong infusion of saffron kills dogs in four or five days; they do not appear to suffer, but gradually sink without pain. The syrup is given in doses of from ʒij. to ʒiij. in cinnamon-water: Dr. Alston used to prescribe ℈i. of the substance, ʒss. of the tincture,

* De Simplic. Medicament. Facult. lib. v. cap. xix.

† Vide Cels. lib. v. cap. v.

‡ See Alibert's Nouveaux Elémens de Thérapeutique, vol. i. p. 552.

§ See Traité des Poisons, vol. ii. part i. p. 197.

and gr. xii. of the extract. There is but one other species of crocus besides our article, the *c. vernus*, a native of the Alps, but which was growing in the botanical garden of Calcutta in 1814.* The crocus sativus "is a bulbous perennial plant; the flower, which appears before the leaves, is sessile on the bulb, of a violet or lilac colour, and raised on a long, slender, white tube; the leaves are linear, a little revolute, of a deep rich green colour, with a white nerve in the centre."

To the extract of saffron has been given the scientific appellation of *polychroite;* it is of a deep yellow colour, deliquescent, readily soluble in water and in alcohol, but insoluble in pure sulphuric ether.

CLXXXVIII.

SAGAPENUM. *Sugbenuj* سكبينج (Arab. and Duk.) *Kundel* (Sans.) *Kundel* (Hindooie). *Sagapenum* (Fr.) *Sagapengummi* (Ger.) *Sagapeno* (It.)

SAGAPENUM.

I have never met with this acrid, bitter, and alliaceous-smelling gum resin in any of the bazars of Lower India; though I find that it has both a Sanscrit and Hindooie name, and also a place in the *Ulfaz Udwiyeh.* Dioscorides tells us (lib. iii. cap. 95.) that it is the juice of a ferula, growing in Media; Dale and Miller say, it is brought to England from Alexandria; Geoffroy would lead us to believe, that it is a product of Persia (ii. cap. 44.). The fact is,

* Introduced by Mr. M'Mahon, in 1810.

that the plant which actually yields this substance has not been hitherto ascertained, but Willdenow supposes it to be the ferula Persica.

Sagapenum has been considered, by the Arabians*, as lithontriptic and attenuant, and placed accordingly amongst their مفتتات and ملطفات, *Mufuttetat* and *Mūlittifat* (Attenuantia and Lithontriptica). European practitioners consider this gum resin as antispasmodic and emmenagogue, and, externally, discutient; and order it in cases in which assafœtida has been found useful; it is usually given in substance, in doses of from gr. viii. to ʒij. Virey†, in his "Histoire Naturelle des Medicamens," expresses an idea, that sagapenum may be the produce of a species of *laserpitium;* and at the same time informs us, that, according to Pelletier, it consists of "resin 54·, gomme 31·, huile volatile 12·, malate acide, de chaux, debris végetaux, &c." For the notions of the Persians respecting this gum resin, the reader may consult a work, entitled *Tukuim al Advia* الا تقويم دويه, or the Apothecaries' Vade Mecum.

Sagapenum would appear, by Murray's account, to be now little used in Germany, except in preparing certain plasters for hastening suppuration (Appar. Med. vol. vi. p. 234.).

* Of all the Arabian writers, Avicenna appears to speak in highest terms of sagapenum: "Paralyticis auxiliatur, valet ad musculorum tendonumque contractionem; cephalalgiam a frigida causa et flatibus excitatam discutit." Canon. Med. lib. ii. tract. ii.

† See his work, p. 225.

CLXXXIX.

SAGE. *Sayselley* சேசேலை (Tam.) *Simie carpoorum elley* (Tam.) *Saoohal* (Cyng.) *Velāitie capoor ka pāāt* ولايتي كاپور كاپات (Duk.) *Shingjin* (Chin.) *Sauge* (Fr.) *Salbei* (Ger.) *Salvia* (Span.) *Salvia* (It.) *Salva* (Port.) *Salbiah* سالبيه (Pers.) *Séfakuss* سفاقس (Arab.)

SALVIA BENGALENSIS (Rottler).

Cl. and Ord. Diandria Monogynia. Nat. Ord. Verticillatæ (Lin.)

This species of salvia was first scientifically described by the learned and excellent Dr. Rottler, and subsequently by Dr. Roxburgh. The leaves differ but little, in any respect, from those of the salvia officinalis*, excepting that they have a peculiarly strong smell of camphor, much of which they, no doubt, contain; and hence their Dukhanie and Tamool names.

Sage is but little employed in medicine by the Hindoos; the Mahometans cultivate it in their gardens, and use it for the same purposes that we do; preparing with the leaves a sort of grateful tea, which they prescribe in certain stages of fever, and as a gentle tonic and stomachic.

The leaves ought to be carefully dried in the shade; they then have an agreeable fragrant odour, with a warm, bitterish, aromatic, and grateful taste;

* It appears by the Flora Japonica, that the s. officinalis is growing in Japan, and called by the Japanese *babinso*. Flora Japon., p. 12.

and are considered as tonic, carminative, and slightly astringent. The infusion alone, or mixed with honey and vinegar, makes an excellent gargle in cases of sore throat. Internally, the powder has been given from gr. x. to ʒss.; or, of an infusion, made with ʒi. of the dried leaves to Oj. of boiling water, ʒij. may be taken every three hours. Virey tells us, in his "Histoire des Médicamens peu connus*," that *baisonge* is the name of an apple gall, or excrescence, found occasionally on the salvia officinalis; and which is eaten by the Turks at Constantinople. Eight species of salvia were growing in the botanical garden at Calcutta, in 1814; but only three of them natives of India, the Bengalensis, brachiata, and parviflora. Three species grow in Ceylon, one of which is the officinalis, or true sage. The Greeks called this Ελελισφακος, from the parched colour of the leaves. The well-known verse of the school of Salernum will show in what estimation sage was held in those days:

"Cur moriatur homo, cui salvia crescit in horto."

The species salvia Indica, or *clary* (sclarea Indica, Miller's Dict.), is much cultivated in India; its leaves, from their fresh and pleasant smell, are bruised and put into *country beer* to improve its flavour.

Murray, in his Appar. Med. vol. ii. p. 201., speaks favourably of an infusion of sage in debilitating night-sweats, as well as of the juice of the leaves in cases of tertian fever, and the aphthous affections of children.

* See Histoire Naturelle des Médicamens, p. 322.

CXC.

SAGO. *Show árisee* சவ்வரிசி (Tam.) *Sāouké chawal* ساوکي چاول (Duk.) *Sábudáná* (Hind.) *Zowbeeum* (Tel.) *Sāgu* (Mal.) *Sekuhme* (Chin.) *Sāgu* (Jav.) *Sāgu* (Bali).

CYCAS CIRCINALIS (Lin.)

Dioecia Polyandria. Nat. Ord. Palmæ. *Gemeine Sagapalme* (Nom. Triv. Willd.).

The fact of the pith of different trees being eaten by the natives of Eastern countries has created no little confusion respecting what is the real sago tree; or that which yields the sago of commerce. Dr. Fleming, in his Catalogue of Indian Medicinal Plants, makes it the produce of the sagus Rumphii of Murray (v. 13.). Willdenow believes the common sago tree to be the cycas circinalis*, which is a native of the Eastern islands, Friendly Islands, and the New Hebrides. It is the *todda panna* of Rheede (Hort. Mal. iii. p. 9. t. 13. 21.), and the *olus calappoides* of Rumphius (Amb. i. p. 86. t. 22, 23.), and may be seen mentioned in another Part of this work, under the Canarese name of *moondichill.* Then again, sago has been said, with much confidence, to be obtained from the *cycas revoluta* of Thunberg (Japan. 229.) *tessjo* (Japan.) This Willdenow also allows to be a sago palm, calling it by the trivial name of *zuruchgerollte sago palme*, and Mr. Phillips gives it as the actual sago tree. It is a native of

* And grows in Ceylon, where it is called in Cyngalese *maddugaha.*

Japan and China, is the *tetsjee* or *arbor calappoides sinensis* of Rumphius, and is supposed by Miller to be the true libby* tree of the Eastern islands, which is mentioned by Dampier and others, as that affording the sago which is so much eaten by the inhabitants of Tonquin, Ternate, Tidore, Mindanao, Borneo†, and all the spice islands; and which is exported into other countries in the form of small round grains.‡

Mr. Crawfurd, in his History of the Indian Archipelago, says, that "sago§ is the produce of the metroxylon sagu, and that it thrives best in marshy situations. The tree is the *huda* of the Ternatese; at Amboyna it is *lapia;* on Banda *romiho;* in Macassar *rambiya* (and the farina of it *palehu*); on Mindanao it is *labi.* Except the *nipa,* the sago palm is the humblest of the palm tribe, seldom rising higher than thirty feet; and, except the *gomuti,* it is the thickest or largest." Its different portions have various economical uses: the hard wood of the trunk, called *kúrúrúng,* is used in ship building, bridges, &c.; the stem of the branch, termed *gábá-gábá,* is used in house building, fortifications, &c.; the leaf is used as thatch; and the bran or refuse of the pith, called *ela,* is employed for feeding hogs.

Dr. Fleming, under the article sago, observes, that sago is procured from the trunks of several other palms besides that mentioned by Murray; such as from the saguerus Rhumphii (Roxb.), which is the

* See Forrest's Voyage to New Guinea, and the Molucca Islands, pp. 35—40.

† See Leyden's Sketches of Borneo, in the 7th volume of the Transactions of the Batavian Society.

‡ Loureiro says, under the head of cycas inermis, that in Tonquin good sago is made from the trunk of it. Flora Cochin-Chin. vol. ii. p. 632.

§ See the work, vol. i. p. 383.

*gomutus gomuto** of Rhumphius (Amb. i. p. 57.). The pith of a tree, called on Ceylon *tálaghas*, and in Malabar *codda-panna* (corypha umbraculifera), is also used as sago, as is that of the *erimpana* (caryota urens). † A substance somewhat similar is likewise prepared from the meal-bearing date tree (phœnix farinifera, Roxb.), the Telinghoo name of which is *chittie cita;* the Tamool *sirroo eetchum*. Kirkpatrick, in his Account of Nepaul (p. 79.), informs us, that the pith of a tree, called in that country *kaholo*, is eaten by the natives; and Thunberg tells us, that the pith of the zamia caffra (zamia lanuginosa, Willd.) may be considered as a sort of sago; indeed, Barrow

* This tree is mentioned by Mr. Crawfurd (vol. i. p. 397.) under the name of *gomuti*, and botanical appellation of *borassus gomutus;* he informs us, that much excellent toddy is obtained from it in the Indian islands; that it is the thickest of all the palms, and may be easily distinguished by its rude aspect. The inhabitants of the Moluccas are in the habit of using in their wars, in the defence of posts, a liquor, afforded by the maceration of the fleshy outer covering of the fruit of the gomuti, which the Dutch call *hellwater*. The interior of the fruit, freed from this noxious covering, is prepared by the Chinese as a sweet meat. A production of great value is obtained from the *gomuti* tree, resembling black horse-hair, found, in a matted form, betwixt the trunk and the branches; with it the natives prepare a useful cordage. This palm, it would appear, is to be met with in the Eastern Archipelago only. In Malay the tree is *anao*, and its toddy *tewak*, and the hair-like material *iju*. The Javanese call the tree *aren*, the horse-hair-like produce *duk*, and the toddy *lágen*. At Amboyna the tree is *naiva*, and the material for cordage *maksee*. At Ternate the tree is *seho;* in the Bali tongue *jahaka*. The Portugese, and all other European nations, call the tree *sagwire;* at Macassar it is *monchono*, and the toddy *juro*. Most of the sugar used by the natives of the Eastern islands is made from the toddy; and with this toddy, when fermented into wine, the Chinese prepare arrack. I perceive that the tree is one of the many interesting objects that called the attention of Mr. Philebert, during his voyage in the Indian and Asiatic Seas.

† A most useful tree in the Indian Archipelago, where it is called by the Malays *nibung*, or *nipa*. Sugar, toddy, and sago, are all got from it; at the top of the tree, as in the cocoa-nut tree, and several other palms, the germ of the new growth affords a substance which is an excellent substitute for cabbage.

says, that it is used as such by the Kaffres of Southern Africa.

Sago, in India, is more used by the Mahometans than the Hindoos; but, even by the former, it is not nearly so much eaten as by the inhabitants of the Eastern islands, whose principal food it is. Mr. Crawfurd tells us, that "there is but one species of the true sago palm, but four varieties: viz. the cultivated, the wild, ONE distinguished by the length of the spines on the branches, and ONE altogether destitute of spines; which last is usually called by the natives the female sago. The first and last afford the best farina; the second a hard medulla, from which the farina is difficultly extracted; and the third, which has a comparatively slender trunk, an inferior sort of farina.

As a diet for the sick, sago is light and bland, and is particularly indicated in bowel affections, and internal inflammations, when it is best given boiled with milk. Brande, in his Manual of Chemistry, vol. iii. p. 35., places sago amongst his starches, making it his third variety.

CXCI.

SAINT JOHN'S BREAD, or FRUIT of the CAROB TREE. *Khirnoob nubti* خرنوب نبطي (Arab.)

CERATONIA SILIQUA (Lin.)

Cl. and Ord. Polygamia Dioecia. Nat. Ord. Lomentaceæ (Lin.).

This article, which had formerly a place in the British Materia Medica, was termed by the Greeks *kéraka;* and has a place in the *Ulfaz Udwiyeh,*

where the pod, called by the Arabians خرنوب شامي, is spoken of as cold, dry, and astringent; the dose three direms. Dr. Alston, in his Materia Medica, informs us, that the husk of the pod has been considered as antacrid, purgative, pectoral, and astringent; and that the Egyptians extracted from it a sort of honey, with which they preserved fruits. Sonnini* tells us, that the carob trees grow in Palestine. Pocock found them flourishing in the island of Scio. We also see by Link's Travels in Portugal, that the tree is a native of that country; he speaks of it as one of the most beautiful in the world. It is common in the island of Diu, or Standia†, where the luscious pulp, contained in the pod, is eaten by the poor and children, and also made into sherbet; the wood of the tree is delicately marked with dark-red veins. The tree itself "grows to a considerable size, with leaves pinnate, leaflets roundish, entire, thick, and rigid; the legume is four or five inches long, compressed, becoming four-cornered when dry, of a dusky ferruginous colour, smooth, fleshy, many-celled, valveless." See Gært. Fruct. ii. 310. Bauh. Pin. 402.

CXCII.

SAL AMMONIAC. *Návácháram* நவாசாரம் (Tam.) *Urmeena* ارمينا (Arab.) *Nowshāder* نوشادر (Pers.) *Vayvagarra loonoo* (Cyng.) *Nuosadur* (Sans.) *Sel ammoniac* (Fr.) *Salmiac* (Ger.) *Sale ammoniaco* (It.)

MURIAS AMMONIÆ.

* See his Travels, p. 395.

† See Olivier's Travels in the Ottoman Empire, p. 233.

Many years ago sal ammoniac was made in Egypt only, and from that country all Europe was supplied with it; it was there prepared by sublimation from the soot of fuel *; within the last sixty years, however, it has been manufactured in various other parts of the world; what of it is used in England is made in some of the Northern counties. Tavernier mentions sal ammoniac amongst the articles, which in his time were brought from Amadabat to Surat (Reisen ii. p. 114.).

This inodorous, bitterish, acrid, and cool-tasting salt, the Tamool practitioners, like us, use in solution, as a repellent in cases of local inflammation and tumour; they also believe it to possess emetic and diuretic virtues, and accordingly administer it in *mághōdrum* (ascites), and *neer ambul* (anasarca); it is moreover supposed to be a useful remedy in certain female obstructions and uterine enlargements, called *vaypoo pāvay* (Tam.).

Sal ammoniac ‡ is now seldom given internally by European practitioners. On account of the cold it produces during its solution in water, it is often advantageously employed as a lotion to abate the pain of inflammation, or allay head-ache. It also

* The fuel commonly used was the dung of camels. See Niebhur's Travels in Arabia, vol. i. p. 97. Bartolomeo tells us, in his Travels (p. 82), that sal ammoniac used formerly to be brought to India from Persia and Arabia.

† What was called sal ammoniacus by the ancients was no other than impure common salt, perhaps rock salt; the first distinct traces of sal ammoniac are to be found, I believe, in the writings of the Arabians. In Geber there is a prescription how to purify sal ammoniac by sublimation, and he flourished in the eighth century, and wrote on alchymy. Avicenna, the chemist, who lived, it is supposed, in the year 1122, was the first that told us that sal ammoniac came from Egypt, India, and Forperia. See Beckman's History of Inventions, vol. iv. p. 364. also p. 375.

forms an excellent discutient for indolent tumours, gangrene, or psora, when dissolved in the proportion of ʒi. of the salt to ʒix. of water, with ʒi. of alcohol.

In some parts of the world this salt is found native, a product of volcanoes; as in the vicinity of *Mooshky*, in the province of *Mekran* in Persia*, close to *Basman*, where there is a mountain called *Koh Noushadir* or Sal Ammoniac Mountain. In Europe sal ammoniac is prepared by sublimation from a mixture of common salt and sulphate of ammonia, or what has been called *secret sal-ammoniac;* by this process sulphate of soda is also formed.

The volatile salt of sal ammoniac, which the Tamools call *náváchárá acrānum*, and in Dukhanie is termed *soongna* سونكنه, is prepared by the former in the following manner:—

Take of *návácháram* (sal ammoniac) one polum, *simie chúnāmboo* (chalk) two pollums; dry the two ingredients carefully, then mix them, and sublime with a strong heat.

The sal volatilis, the native practitioners of India do not appear ever to administer internally, using it merely as a local stimulant to the nose, in fainting fits, languors, and hysteria. European practitioners recommend it in cases requiring diaphoretics, antacids, stimulants, and antispasmodics; in large doses it proves emetic. The common dose is from gr. iij. to gr. xx. in pills, or dissolved in water; to produce vomiting ʒss. may be given for a dose.

By a paper which has lately been published in Brewster's Philosophical Journal of Science (No. 4.),

* See Macdonald Kinneir's Geographical Memoir of Persia, p. 224.

it appears, that ammonia has been found to be a complete antidote to the hydrocyanic or prussic acid.

CXCIII.

SALEP. *Sālāmisrie* சலாம்பிசிரி (Tam.) *Salibimisri* مصري ثعلب (Arab. Hind. and Duk.) *Salep* (Fr.)

ORCHIS MASCULA (Lin.)

Cl. and Ord. Gynandria Monandria. Nat. Ord. Orchideæ. *Salep Ragwurz* (Nom. Triv. Willd.)

Salep used formerly to be imported from Eastern countries, but is now prepared in several parts of Europe; and Mr. Mault of Rochdale has given us the method of drying and curing the orchis root, from which it is obtained. The plant thrives well in England, and Withering has in consequence expressed a hope that we shall no longer be supplied from foreign markets with an article our own country can furnish us with, in almost any quantity.

Salep is considered as a medicine possessing great invigorating virtues by the Egyptians, who call it, according to Forskahl, *khoosie tālēb* خصي ثعلب (Mat. Med. Kahirina). As an article of diet it is light, bland, and nutritious, and is particularly indicated, and recommended by Dr. Percival, in dysentery, dysuria, and internal inflammation; it is to be met with in most of the bazars of Lower Hindoostan, and is an export to that country from the Levant.*

The Arabian physicians prescribe it with great

* See Macgill's Travels in Turkey, vol. ii. p. 173.

confidence in consumption; the Indian practitioners believe salep to be a powerful strengthener of the body, and prescribe it in conjunction with mastick, and some other ingredients in cases requiring tonics.* The French call the male orchis "satyrion," and "testicle de chien;" the last name is from the appearance the two bulbs have that are fixed to the base of the stem, "which is round, smooth, upright, and about a foot high; naked above, but below surrounded with leaves, which are lanceolate, alternate, and broadish: the flowers are numerous, and on a loose spike." Deslongchamps in his "Manuel des Plantes Usuelles Indigenes" (vol. ii. p. 546.), informs us, that judging from the testicle-like appearance of the bulbs, composing the root of this plant, the ancients had a strange idea that it had a powerful influence on the organs of generation of man; and such it was no doubt supposed to have by Theophrastus, Pliny, and Galen. It is about eighty-five years ago, since Geoffroy, the brother of the author of the Materia Medica, first published in the Memoirs of the Academy of Sciences, the mode of making salep from the indigenous orchis of France, of a quality not inferior to that of Eastern countries. Brande † gives *salop*, obtained from the roots of several species of orchis, as his fifth variety of starch. Of the seventy-eight species of orchis hitherto scientifically noticed, but six appear to be natives of Asiatic countries (see Willd. Spec. Plant.). Three species grow in Ceylon; the *viridi flora*, the *cubitalis* and the *strateumatica*.

* Salep has the singular quality of depriving salt water of its salt taste, a property which might be turned to good account in long voyages; the mucilage is best used for this purpose.

† See his Manuel of Chemistry, vol. iii. p. 35.

CXCIV.

SALT, COMMON. *Ooppoo* உப்பு (Tam.) *Némuck* نمک (Pers.) *Nimmuk* نمک (Duk. and Hind.) *Loonoo* (Cyng.) *Loon* (Hindooie). *Lavana* लवण (Sans.) *Lawanum* (Tel.) *Garam* غارم (Mal.) *Uyah* (Jav.) *Uyah* (Bali.) *Muriate de soude* (Fr.) *Salzaures natrum* (Ger.) *Sal commune* (It.) *Melh* ملح (Arab.) *Meet* (Mah.) *Yen* (Chin.)

MURIAS SODÆ.

Besides the common method of procuring culinary salt by evaporating* sea water, which is that adopted in the Sunderbunds, where a quantity is made equal to the consumption of all the Bengal provinces, the native Indians prepare it by percolation, and crystallizing, from certain red soils which contain it; such as that found near *Malaya Banaru*, in Mysore, in *Ayudh*, and in the district of Benares.† They also prepare it in inland situations, from salt springs or lakes‡, similar in their nature to those of Luneburg, and the salt lake mentioned by Russel (see his Account of Aleppo); a lake of the same kind we find noticed by Macdonald Kinneir, in his excellent Geographical Memoir of Persia (p. 60.), at

* In Java salt is procured by a similar process. See Crawfurd's History of the Indian Archipelago, vol. i. p. 199.

† See Remarks on the Husbandry of Bengal, p. 181.

‡ There is a singular salt lake, called lake of Loonar, in Berar, in lat. 19° 10′ and long. 75° 3′ E. The salt of this lake is of a greyish colour, crystallized in cubes; it is used for seasoning food by the Mahometans, and in cleaning the shawls of cashmere. See Edin. Philosophical Journal, pp. 310, 311.

Bagtegan, about ten miles from Shiraz, in the province of *Fars*. Kirkpatrick, in his Account of Nepaul, tells us (p. 207.), that salt is an import into that country from Thibet; it is a valuable export from Java* to the West coast of Sumatra. In India, that of the finest quality is manufactured in *Cuttack*, bringing, I understand, an annual revenue of not less than sixteen lacs of rupees; it is there got by evaporating sea water; that which is subsequently purified by boiling is called *pangah*.

Hindoos, of all descriptions, set a very high value on salt; using the phrase "*I eat his salt*," to express a sense of gratitude, as much as to say "*I am bound to serve him faithfully*." They ascribe many ailments to the want of good salt, which, indeed, they often experience at places remote from the sea, where they get an impure, bitter sort, obtained in the preparation of salt-petre, from certain earths which contain it. The *Vytians* consider salt as we do, to be tonic, anthelmintic, and, externally, stimulant; but do not appear to be aware, that in large doses it has been found to check vomiting of blood; nor that it has a considerable aperient quality† when largely taken. The Brahmins, who eat nothing but vegetable food, believe, that without salt they would die. For an admirable account of the different methods of manufacturing salt, the reader may consult Aikin's Dictionary, art. *Muriate of Soda*. Analysed by Berzelius, salt was found to consist of 46·55 of muriatic acid, and 53·44 of soda.

* See Sketches Civil and Military of Java, p. 41.

† There is, perhaps, no passage more just and true in all his writings, than those words of Avicenna: "Sal fœcum excretionem ac ciborum descensum promovet; ad putrifactiones et humorum crassitiem valet." Canon. lib. ii. tract. ii.

CXCV.

SALT, ROCK. *Indoopoo* உப்பு (Tam.) *Lahorie nemuck* لاهوري نمک (Duk.) *Sawinda loonoo* (Cyng.) *Nimuki sung* نمک سنگ (Pers.) *Sindaloon* (Hindooie). *Saindhava* सैन्धव (Sans.)

Rock salt is brought into Hindoostan from Thibet, where, as well as in Bootan and in Nepaul, Turner* tells us, it is used for all domestic purposes; it is also an export from Lahore†, in which country, according to Rennel, in a tract betwixt the Indus and Ihylum rivers, it is found of a quality hard enough to make into vessels. It is a product of Persia, in the province of *Mekran;* and Mr. Elphinston, in his interesting Account of Cabul‡, informs us, that near *Callabaugh*, on the bank of the Indus, there are immense quantities of rock salt, in large blocks, like rocks, in a quarry; and thence exported to India and Khorassan. The rock salt mine of Wiliska, in Poland, we are told by Mr. Coxe, in his Travels (vol. i. p. 197.), is 6695 feet long, and 743 feet deep. Rock salt, in England, is chiefly procured from Cheshire, where there is a stratum, no less than fifty feet thick. In December, 1823, Chaptel made a report in the Academy of Sciences, of Paris, on the rock salt of the mine discovered, in 1820, at *Vich*, in the department of *La Meurthe*, in France; there are

* See Turner's Embassy to the Court of the Tishoo Lama, pp. 406, 407.

† See Pennant's View of Hindoostan, vol. i. p. 42.

‡ See his work, p. 40. Also found at *Bulkh*. See same work, p. 147.

there, it would seem, four sorts; white, half grey, grey, and red; the white is peculiarly fine, and altogether fit for the table. A valuable quality of the rock salt of *Vich*, is, that it is not deliquescent; the mine occupies about thirty square leagues, and its thickness such, that it may be worked for several thousand years without being exhausted !!

Rock salt is the *chloride of sodium* of modern chemists, and, according to Brande*, consists of

1 Proportional of chlorine	33·5
—————— sodium	22
	55·5

having all the properties of common salt.† I shall conclude what I have to say on the subject of rock salt by observing, that the native farriers think it has particular virtues in clearing and softening the coats of horses, by mending their general health.

In Western countries, such as in the great Peruvian Desert, near *Huara*, there is a rich rock salt mine; in Africa, again, in the desert of *Sahara*, near Tombuctoo, there is also a rich rock salt mine.

CXCVI.

SALT PETRE. *Potti-looppoo* பொட்டுலுப்பு (Tam. and Tel.) *Shorah* شورہ (Pers. and Duk.) *Bājee* (Hindooie). *Sandawa* සාන්දාවා (Mal.)

* See Brande's Manual of Chemistry, vol. ii. p. 48.

† For an account of the *bit-laban*, or *cala nemec*, which is a preparation made with the muriate of soda, and fruit of the phyllanthus emblica, see the second volume of this work, article Bit-laban.

also *Mesiu mentah* (Mal.) *Ubkir* ابكر (Arab.) *Yava-kshāra* यवक्षार (Sans.) *Wedie loonoo* (Cyng.) *Nitrate de potasse* (Fr.) *Salpeter saures kali* (Ger.) *Salpeter* (Dut.) *Nitro* (It.)

NITRAS POTASSÆ (Edin.)

It is well known that this article, has, for many years past, been procured in great quantities from the earth containing it in several provinces of Hindoostan, but especially in those lying west of *Bihar*, where the hot winds are more prevalent, than in the tracts extending farther east; and it is observed, that the production of nitre is greatest during the period when the hot winds blow: from Bengal it is brought to England in an impure state. Salt petre appears to be obtained artificially in various ways in different countries; in Podalia, in Poland, it is got from the tumuli or hillocks, which are the remains of former habitations. In Cabul it is made almost every where from the common soil; in Spain from the land after a crop of corn; in Hanover by collecting the rakings of the streets; and in India, in some parts, from the earth of old walls, scrapings of roads, cow-pens, and other places frequented by cattle.

There is little salt petre manufactured in the lower provinces of India; in the *Coimbatore country* it is made at considerable expence, and of an inferior quality to that which comes from *Bihar*. Salt petre is a product of the soil in the *Burmah dominions*, in *Siam* (in the province of Corie), also in *Mekran*, and amongst the mountains behind *Tehraun** in

* See M. Kinneir's Geographical Memoir of Persia, pp. 319. 224. 40.

Persia. On *Java** it is prepared by boiling the soil of caves, frequented by bats and birds, chiefly swallows.

The native doctors prescribe salt petre † for nearly the same purposes that we do; to cool the body when preternaturally heated, and in cases of *neer-cuttoo* and *kull-addypoo* (ischuria and gravel). They are also in the habit of cooling water with it, (which it does by generating cold while dissolving), for the purpose of throwing over the head in cases of *phrenitis*. Given in repeated small doses, not exceeding ten or twelve grains, it abates heat and thirst, and lowers arterial action. Dr. Thomson says it is contraindicated in typhus fever and hectic affections; and that a small portion of it, allowed to dissolve in the mouth, has been found to remove incipient inflammatory sore throat. Mr. Brande informs us, that nitre consists of one proportional of acid =50·5 + one proportional of potassa =45. ‡

CXCVII.

SALT GLAUBER. *Sulphate de soude* (Fr.)

SULPHAS SODÆ.

* See Crawfurd's History of the Indian Archipelago, vol. i. p. 201.

† Native salt petre Cronstedt was not acquainted with; such as it is, often seen as well in Portugal, Spain, and America, as in the East Indies, chiefly as an efflorescence on certain damp and ruinous walls; it is the earthy salt petre, and to be distinguished from the cubical salt petre of Professor John Böhn; incrustations on walls are not always, however, salt petre; they are not rarely soda combined with more or less calcareous earth. The name *nitrum* appears to have been indiscriminately applied to both incrustations. See Beckman's History of Inventions, vol. iv. pp. 529, 530.

‡ See Brande's Manuel of Chemistry, vol. ii. p. 37.

I perceive by Dr. F. Hamilton's Account (MSS.) of the district of Purniya, that he there found a coarse kind of Glauber salt brought from Patna, and called in Hindoostanie *khari numuk* also *khara noon.**

CXCVIII.

SANDAL WOOD. *Chandanum* சந்தனமரம் also *Shándáná-cuttay* (Tam.) *Sundel* صندل (Duk.) *Sandoon* (Cyng.) *Sundel abiez* صندل ابيض (Arab.) *Sundul suffeid* صندل سفيد (Pers.) *Chunden* (Hindooie). *Sandalo* (It.) *Sandale* (Fr.) *Chandana* (Hind. and Beng.) *Sri gūnda* (Can.) *Tsjéndáná* (Mal.) *Chendanum* (Tel.) *Chandana* चन्दन also *Malayaja* मलयज (Sans.) *Aikamenil* (Timur). *Ayasru* (Amboynese). also *Katchandan* (Hind.) *Cayhuynhdan* (Coch. Chin.) *Tan-muh* (Chin.)

SANTALUM ALBUM (Lin.)
SIRIUM MYRTIFOLIUM (Roxb.)

Cl. and Ord. Tetrandria Monogynia. Nat. Ord. Onagræ (Juss.)

Sandal wood in powder is prescribed by the *Vytians* in *tava jorum* (ardent remittent fever), from its supposed sedative and cooling qualities; they also look upon it as a valuable medicine in gonorrhœa, given in cow's milk; a virtue we see by Rumphius,

* It is to be presumed that it is a very impure sort; Dr. Hamilton does not know whether it is prepared at Patna or found native, which it often is, in combination with oxide of iron, and muriate and carbonate of soda, and sometimes effloresced on the surface of the soil, as in Hungary.

that it is considered to possess at Amboyna (Rumph. Amb. tom. ii. p. 42.). In cases of morbid thirst it is recommended to be taken in cocoa-nut water; and in hot weather, after bathing, the powder is rubbed over the body, equally to cool it, and check too copious a perspiration. The Mahometans are in the habit of preparing with the most yellow and finer parts of the wood, an oil which they highly value as a perfume. The sandal wood tree grows in great abundance in Travancore, in the Coorgh and Wynade districts, and in Mysore. The same tree yields the white and yellow sandal wood, the last is the inner part of the tree, and is of great hardness and fragrance, particularly near the root of the tree; the white is the exterior part of the tree, is less firm and has but a faint odour.

The tree which grows in Ceylon and is there called *rat-kihiri* has "somewhat the appearance of a myrtle, with stiff, brachiate branches, everywhere jointed; leaves opposite on short petioles, spreading, lanceolate, entire, waved, shining, about two inches long, and three quarters of an inch broad; the flowers are small, red, in a terminating compound, small, erect, thyrse-like raceme; the fruit a small berry, by which the tree is propagated." The santalum album is common in the Indian islands, particularly in Sumatra * and Timor; at Siam and Malacca it grows with luxuriance. Mr. Crawfurd however informs us, that the sandal wood of the Eastern islands is inferior to that of Malabar. From the first mentioned of these countries it is imported into Java, and brings there about from 8 to 13 Spanish dollars per picul.

* See Marsden's Sumatra, p. 129.

What is called *aghilcuttay* in Tamool, and *aghir-kagore* by the Mahometans, is a reddish-coloured resinous-fragrant bitter wood, sometimes added in powder to powdered sandal wood, to increase its fragrance. I am not altogether certain what it is, but am inclined to believe it to be an inferior sort of aloes wood, called by the names of *aghallachum*, and *calambour* (aquilaria ovata). The tree is a native, Turpin says, of Siam, it is also to be met with on Cambogia, Timore, *Cochin-China* *, Borneo †, and the *Sooloo Islands*.

It would seem that much uncertainty had arisen from the two trees *aquilăria ovata* and *excoecaria agallocha*, having been confounded together (and the English terms of *aloes* wood and *eagle wood* indiscriminately applied to both), but they are very different; the first being of the class and order Decandria Monogynia, and the latter of those of Dioecia Triandria. Mr. Martyn seems to have no doubt, but that the perfume we allude to is from the aquilaria ovata, which is the *aloexylum agallochum* of Loureiro, and *agallochum* (Rumph. Amb. ii. t. 10.). He says, the wood itself is naturally inodorous; and that when it has aroma, it is a *disease*, caused by oleaginous particles stagnating in the inner parts of the trunk and branches into a resin, till at length the tree dies; and when split, the valuable resin is taken out: he adds, "that all the true lignum aloes ‡ proceed from *this* tree, even the most valuable, commonly called *calumbac*." Perfumes from this wood, Loureiro says, are highly esteemed by Eastern

* See Borris's Account of Cochin-China.

† See Lokyer's Account of the Trade of India, p. 129.

‡ See further particulars on this subject, under the head of *Wood Aloes*, in this volume and chapter.

nations; being useful remedies, they suppose, in vertigo, palsy, and in restraining vomiting and fluxes.

The Arabians place sandal wood amongst their *Mokewyat-dil* دل مقويات (Cardiaca); the dose half a miscal. The tree is fully described by Loureiro, who also notices the virtues of the wood: "Resolvens, diaphoretica, cardiaca," &c. Vide Flor. Cochin-Chin. vol. i. p. 87.

CXCIX.

SANDARACH. *Sundroos* سندروس (Arab.)
JUNIPERUS * COMMUNIS (Lin.)

Cl. and Ord. Dicœcia Monadelphia. Nat. Ord. Coniferæ.

This resinous substance is commonly met with in loose granules, a little larger than a pea, of a whitish yellow colour, brittle and inflammable, of a resinous smell, and acrid aromatic taste; it exudes, we are

* I have given juniperus communis as the plant from which gum sandarach exudes in warm climates, from the authority of Dr. Thomson (Lond. Dispens. 3d edition) and Dr. Hooper; but I find, that Virey, in his "Histoire Naturelle des Medicamens," says, it is obtained from the *thuya articulata* of Desfontaines (p. 318.); and Nicholson, in his Dictionary of Chemistry applied to the Arts, mentions the same thing, which he does on the authority of a Danish traveller, *Schousboe*, who is of opinion, that the juniperus communis does not grow in Africa, whence the sandarach comes; and we know that Broussonet affirms, that the resin called sandarach flows from the *thuya articulata*, in the kingdom of Morocco. How all this is, I cannot pretend to say; had there been any similarity betwixt the two plants, I could have imagined a mistake, but the juniper is of the class and order Dicœcia Monadelphia, and the thuya articulata of the class and order Monoecia Monodelphia; the first has leaves narrow and awl-shaped, the last has *no leaves at all*, but scales at the top of the joints. Then, on the other hand, we find, that the Italian name of sandarach is *gomma de ginepro!*

told, from cracks and incisions in the stem of the juniper bush, which the Greeks knew by the name of Ἀρχευθος, and which, by Jackson's account, is common at Morocco, and is there called *thuya*, and *arar;* the roofs of the houses and ceilings are made of the wood of it (See his Travels in Morocco, p. 78.).

Sandarach is seldom seen in India; the Arabians, as a medicine, consider it as drying, and order it in the quantity of half a miscal, in cases of diarrhœa and hemorrhage. I cannot learn that they use it as a varnish, the purpose to which it is applied in Europe, dissolved in spirits of wine. See article Varnishing, in Imison's work on Science and Art, vol. ii. pp. 343, 344.

The juniperus communis is a native of Japan, called by the Japanese *hjakusi*. Flor. Japon. p. 264.

CC.

SARCOCOLLA. *Unzeroot* انزروت (Arab.) *Kunjudeh* كنجدہ (Pers.)

PENAEA MUCRONATA (Lin.)

Cl. and Ord. Tetrandria Monogynia.

This subviscid, sweetish, and somewhat nauseous gum resin, is but rarely met with in India; and what is found, is brought from Persia or Arabia; it is seen in small grains of a pale yellow colour. It is an article of the Mogul Materia Medica, and is well known to the Arabians, who suppose it to have virtues, applied externally, in agglutinating wounds (hence its Greek name σαρξ κολλα); and a ordingly place it amongst their *Yabisaut kerouh* يابسات

فروج (Epulotica). Some of the more ancient Arab writers, such as Mesue, seem to have considered it as, in a certain degree, cathartic; he says of it, "purgat pituitam crudam, et alios humores crassos;" though it does not appear to have been in much repute. Of an ounce of sarcocolla, Newman found three drachms soluble by alcohol, and five drachms by water.*

The shrub which yields the sarcocolla, by spontaneous exudation, is a native of Æthiopia; having leaves accuminate and smooth, with red terminating flowers. For an account of the plant, the reader is referred to Dr. Duncan, junior's, excellent Edinburgh Dispensatory, p. 302.

CCI.

SARSAPARILLA, substitute for. *Nunnarivayr* நன்னரிவேர் (Tam.) *Muckwy* مكوي *Oshba* اوشبا (Arab.) *Mugraboo* (Hindooie). *Shārivā* शारिवा (Sans.) *Soogundapāla* (Tel.) *Erramas-soomool* (Cyng.) also *Irimusu* (Cyng.)

PERIPLOCA INDICA (Lin.)

Cl. and Ord. Pentandria Digynia. Nat. Ord. Contortæ. *Indische Schlinge* (Nom. Triv. Willd.)

What is commonly called by the English in India, *country sarsaparilla*, is not the root of the smilax† sarsaparilla, which is, however, occasionally brought

* Avicenna, speaking of it, says, "vim habet sini mordacitate glutinandi; et carnem gignit; inflammationes omnes mitigat, more emplastri imposita." Vide Canon. Med. lib. ii. tract ii. p. 36.

† The smilax perfoliata (Lin.) is a native of Cochin-China, where it is called *ti-giai*, and is supposed to have similar virtues to sarsaparilla.

to the Coromandel coast from America; but that of the *periploca Indica*, a common Indian plant, and which is the *periploca foliis angustis acutis glabris* of Burman (Burm. Zeyl. 187. t. 83. f. 1.). The two roots very much resemble each other in appearance and natural qualities; both being inodorous, mucilaginous, and, in a slight degree, bitter. The nunnarivayr is recommended, by the Tamool doctors, in cases of gravel and strangury, given in powder, mixed with cow's milk; they also give it in decoction, in conjunction with cummin seeds, to purify the blood, and correct the acrimony of the bile. The *perip. emetica* is a native of India, and grows on the Coromandel coast. The p. esculenta is described by Roxburgh (Cor. Plant. i. t. 11.)

On the Malabar coast, the root of the *cari vilandi* (smilax aspera*) is used for the same purposes that the root of the periploca Indica is on the Coromandel coast; it is the Σμιλαγγα of the modern Greeks, who use it to purify the blood. The *cari vilandi*, I doubt not, is the plant we find mentioned by Bartolemeo†, under the name of *the red flowered vella-damba*, and which is, he says, used for sarsaparilla on the Malabar coast.

The decoction of the root of the periploca Indica is prescribed by European practitioners in India in cutaneous diseases, scrophula, and venereal affections, to the quantity of ℥iij. or ℥iv., three times in the day. In America it would seem that various plants have, at different times, been used for purify-

* See Hort. Malab. vol. vii. p. 78. See also Virey's Histoire Naturelle des Medicamens, p. 151.

† See his History of the East Indies, p. 417. Michelle, in his *Della Corciresse Flora* (p. 128.), informs us, that the modern Greeks call the smilax aspera Ασμιλαχι χοινον, and that the root possesses virtues similar to those of sarsaparilla.

ing the blood. Ruiz*, in his Flora Peruviana, particularly mentions the following: viz. *lapageria rosea*, *luzuriaga radicans*, and *herreria stellata*.

The periploca Indica, or country sarsaparilla† plant, "has a twining, round, ash-coloured stem; a pair of leaves from each joint, almost sessile, bright green above, and pale underneath, with many flowers, which sit close." It is a native of Lower India and Ceylon, though I do not see that it is noticed by Mr. Moon, in his Catalogue of Ceylon Plants. I have already noticed the powerful alterative qualities which the China root (smilax China) is said to possess; it is the *Too-fuh* of the Chinese.

CCII.

SASSAFRAS. *Cay-vang-dee* (Cochin-China). ساسافراس *Sasafras* (Arab.) *Sassafras* (Fr.) *Sassafrasso* (It.) *Sassafras lobbeer* (Ger.)

LAURUS SASSAFRAS (Lin.)

Enneandria Monogynia. Nat. Ord. Lauri (Juss.)

This plant has a place here from its being a native of an Eastern country (Cochin-China), as well as North America. Loureiro‡ describes it fully:

* See Flora Peruviana, vol. iii. pp. 65, 66. 69.

† It would appear by the Gazette de Sante, that M. Galileo Poliotta, an Italian physician, has recently discovered an active principle in sarsaparilla, which he calls parigline; it is white, pulverulent, light, unalterable on exposure to the atmosphere, of a bitter taste, and slightly astringent; it unites with all the acids, forming various salts; in its medical qualities it is sedative and diaphoretic.

‡ See Flora Cochin-Chin. vol. i. p. 254.

"Arbor magna, trunco erecto, ramis in vertice patentibus, ligno levi, cinerio, odorato," &c. It is for this last property in the wood, that the tree is cultivated; it generally rises to the height of twenty or thirty feet, with a trunk about twelve inches in diameter, covered with a furrowed bark, which, like the wood, has an agreeable fragrant odour, and a sweetish aromatic taste; the wood is of a brownish-white colour, and the bark, as Dr. Thomson well describes it, is ferruginous within, spongy, and in divisible layers. In Cochin-China, where the tree grows in the woods towards Borea and Tunkin, the wood and bark are considered, as in Europe, diaphoretic, sudorific, and diuretic; and are taken in infusion in cases of rheumatism, and wandering pains. The character which this medicine once had, as a powerful antisyphilitic, is now somewhat doubtful; and more is, perhaps, justly to be ascribed to the *guaiac*, with which it is usually combined. Alibert* holds out a caution in prescribing the essential oil of sassafras, but he does not say why; of the bark and wood he speaks in the highest praise, and cites a case of obstinate rheumatism in which the infusion was used with the happiest effect, when many other medicines had failed. The sassafras met with in Egypt, Forskahl tells us, in his Mat. Med. Khairina, p. 148, was brought from the Archipelago in his days, and used by the Arabians in venereal complaints.

* See Nouveaux Elémens de Thérapeutique, vol. ii. p. 302.

385

CCIII.

SAUNDERS, RED. *Ségápoo shándánum* சேகப்பு சாந்தனம் (Tam.) *Lāl chundend* لال چندند (Duk.) *Sundal ahmer* صندال احمر (Arab.) *Ruckut chundun* (Hind.) *Sundul soorkh* صندل سرخ (Pers.) *Kuchandana* कुचन्दन also *Tilaparni* तिलपर्णी also *Ranjana* रंजन and *Rakta-chandana* रक्तचन्दन (Sans.) *Ruct handoon* (Cyng.) *Honnay* (Can.) *Kuchandanum* (Tel.) *Rackta chandana* (Beng.) *Santale rouge* (Fr.) *Sandalholz* (Ger.) *Sandalo roso* (It.) *Undum* (Hindooie). *Buckum* بقم (Pers.) *Undum* عندم (Arab.) *Sandel-hout* (Dan.) PTEROCARPUS SANTALINUS (Kœn.)

Cl. and Ord. Diadelphia Decandria. Nat. Ord. Papilionaceæ (Lin.)

This heavy, insipid, and nearly inodorous colouring wood, is little used by the Indian medical practitioners, though they sometimes recommend it in powder, in conjunction with certain herbs, and mixed with gingilie oil, as an external application and purifier of the skin after bathing.

The pterocarpus santalinus is a useful timber tree, and grows on Ceylon*, on the island of Timor, on the Malabar coast, and in Mysore; in which last mentioned country it is termed *whonnay;* the bark of it contains much colouring juice. The tree itself, which was first scientifically described by Kœnig, "is

* Mr. Moon notices another species as growing on that island, the bilobus (*ganmalu*).

lofty, with alternate branches; leaves petiolated and ternate, ovate, blunt, and entire; the flowers are in axillary spikes; the corolla papilionaceous and of a red colour." Mr. Brande tells us, that the deep red colouring matter of this tree is insoluble in water, but readily so in alcohol. We learn from Virey*, that Pelletier prepared with the reddish coloured resin, obtained from the tree, a valuable red-colouring extract, which he termed *santaline*. Red saunders does not appear to possess any medicinal properties. It may be found noticed by Avicenna† (p. 241.), under the Arabic name *sundul* صندل. Five species of pterocarpus were growing in the botanical garden of Calcutta in 1814, all Eastern plants, except the draco, a native of America, introduced in 1812, by Captain Young.

The pterocarpus santalinus, and another species, which the Cyngalese call *gan-malu* (pterocarpus bilobus), grow in Ceylon. See Moon's Catalogue of Ceylon Plants.

CCIV.

SCAMMONY. *Sukmoonia* سقمونيا (Arab.) *Mehmoodéh* (Hindooie). *Scammonée* (Fr.) *Scammonium von Aleppo* (Ger.) *Scammonea* (It.) *Sukmoonia* سقمونيا (Duk.)

CONVOLVULUS SCAMMONIA (Willd.)

* See his Histoire des Medicamens, p. 286.

† Avicenna mentions three kinds, luteum, rubrum, and pallidum. "Affluxum humorum coercet, maxime rubrum, calidos tumores discutit, imponiturque erysipelati." Vide Canon. lib. ii. tract ii. p. 250. Loureiro informs us (Flor. Cochin-Chin. vol. ii. p. 432.), that a decoction of the root of the pterocarpus flavus, is an excellent and permanent yellow dye.

This gum resin, which is obtained by incision from the root of the plant, does not appear to be at all known to the Hindoos. The Mahometan practitioners are acquainted with it; but, I presume, seldom prescribe it. The Dukhanie name of this article, as we learn from Secunder*, is a Syrian word; and we also learn from the same author, that the Arabians sometimes bestow on it the appellation of *mahumooda*, and hence, no doubt, the Hindooie name.

I find that scammony is mentioned† amongst the medicines which might be sent to Europe from India; it is otherwise, as we see by the Ulfaz Udwiyeh, brought to India from Antioch of a good quality, which it is, when light, glossy, of the colour of raw silk, and easily friable, with a peculiar heavy odour, and a bitterish, slightly acrid taste. The plant is a native of Syria and Cochin-China‡; and is, Russel informs us, found in abundance between Aleppo and Latachea. The gum resin is procured in the form of a milky juice from the root, which is perennial, often more than four feet long, and three or four inches broad; the plant itself, which is of the class and order Pentandria Monogynia, and nat. order Campanacea (Lin.), "rises commonly to the height of sixteen or eighteen feet, sending up many twining stems, with arrow-shaped green leaves on

* See his work, entitled مفردات سكندري *Mufurdatie Secunder*, on the Materia Medica. It was originally written in Syrian, by *Yahiakoorb*, and translated into Persian by Secunder.

† See Remarks on the Husbandry and Commerce of Bengal, p. 205.

‡ It grows wild in the woods of Cochin-China, and is called by the inhabitants *khoai-ca-hoa-vang*. Vide Flor. Cochin-Chin. vol. i. p. 106.

long foot stalks; flowers in pairs, having a funnel-shaped, pale yellow corolla." Scammony is a very powerful cathartic, operating quickly, and is particularly indicated in cases of dropsy, torpor of the intestines, hypochondriasis, and mania; as well as in worm cases, and in that slimy state of the bowels to which children are subject (See Thomson's London Dispensatory.).

It has been by some authors considered as an irritating and unsafe medicine; this, however, Dr. Thomson appears to think it only is, in an inflamed state of the bowels. Dioscorides takes no notice of the dangerous qualities of this powerful cathartic; but Aitius, Mesue*, and some other Arabian writers, scruple not to say, that it ought never† to be used. The more modern Arabians and Moguls place scammony amongst their *Mooshilāt-suffra*‡ مسهلات صفرا (Chologoga). The usual dose is from gr. v. to gr. xv.

The inferior sort of scammony exported from Smyrna, called *Smyrna scammony*, and which is black, heavy, and splintery, Dr. Thomson seems to think is obtained from the same plant that the better kind is; but is, he says, mixed by the Jew merchants with impurities. Mr. Gray, however, in his "*Supplement to the Pharmacopœias*," tells us, that it is procured from a different plant, *periploca scammonium* (See his work, p. 62.).

Celsus recommends scammony in cases of lum-

* Vide Mesue, Simp. lib. ii. cap. i. fol. 47. B.

† I perceive, however, that Rhazes allows it to be taken cautiously: "Scammonea bilem rubeam vehementer expellit." Vide Oper. de Re Med. lib. viii. p. 206.

‡ See Noureddeen Mohammed Abdullah Shirazy's work on the Materia Medica, article سقمونیا.

brices (lib. iv. cap. xvii.). The French * and Germans are in the habit of temperating its acrimony, by means of a preparation they term *diagrydium rosatum.* The preparations of scammony are the *confection,* dose from a scruple to a drachm; the *compound powder,* dose from gr. x. to ℈i.; *extract colocynth. comp.* from gr. v. to ʒss.; *pulv. sennæ comp.* from ℈i. to ʒi. Twenty-one species of convolvulus grow in Ceylon.

CCV.

SENNA. *Nilāvérei* also *Nílāvāghéi* நிலாவரை (Tam.) *Soonā mukki* سونا مكّي (Hind. and Duk.) *Sana pāt* (Beng.) *Sunā* سنا (Arab.) *Nayla tungādoo* (Tel.) *Nilāvériè* (Cyng.) *Amshúnāttydivándívá* also *Bootallapotaka* (Sans.) also *Nela ponna* (Tel.) *Séné* (Fr.) *Sennabläter* (Ger.) *Sena* (It.)

CASSIA SENNA (Lin.)

Cl. and Ord. Decandria Monogynia. Nat. Ord. Lomentaceæ.

This is reckoned one of the best and safest purgatives that is to be met with in India, where the plant grows in great abundance. The natives are, however, in the habit of quickening its operation, with the addition of a little castor oil, which would not be necessary were it the pointed-leaved senna (foliis acutis); but it is the blunt-leaved senna (senna

* Of this medicine Duroques says, "Les personnes qui ont la fibre molle, la sensibilité obtuse se trouvent fort bien de ce purgatif, mais on doit en user sobrement dans les climats chauds." See Roques Phytographie Medicale, vol. i. p. 262.

Italica) (foliis obtusis), and by no means so powerful as what is called the Alexandrine senna, on the continent of Europe; and which Niebhur informs us, grows in the territory of *Abuarish*, and is brought by the Arabs to Mecca and Jedda; neither is it nearly so strong as the pointed-leaved variety which is usually carried for sale to Eastern countries, and which grows in Arabia Felix in the neighbourhood of Mocho.

Most of the senna used in England is the produce of Egypt, the best sort called in Nubia, *guebelly*, where it grows wild. The leaves when carefully dried (in the sun), have a faint, rather sickly odour, and a slightly bitter, sweetish, and nauseous taste. It would seem that they are sometimes adulterated with the leaves of the coronilla emerus, and periploca Græca, which last increase their purgative quality; these may be detected by being larger and more pointed (Delille, Egypt.).

The usual and best form of giving senna is in infusion, the dose from about f℥iij. to f℥iv. prepared according to the London Dispensatory, where it is recommended that the leaves should be infused in boiling hot water for one hour; but it has been ascertained, I have reason to believe by Dr. Gillies of Bath, that the infusion becomes infinitely more powerful, if the leaves are permitted to infuse for the whole night: ʒij. prepared in this mode, with as much manna, is an effectual dose for an adult.*

I was surprised to see on reading "*Waddington's*

* Roques, in his Phytographie Medicale, vol. ii. p. 255., gives us quite an eulogium on senna, as a purge, in cases of head-ache, vertigo, pulmonary catarrh, rheumatism, &c., but cautions us against its use: "Lorsque l'embarras des intestins est accompagné d'une irritation vive, que le langue est rouge, seche, et l'abdomen sensible."

Journey to Ethiopia" (p. 227), that in the district of *Darmahass* senna is only used as a dye, and not known at all as a medicine. Mr. G. Hughes of Palamcotah, a few years ago, succeeded perfectly in cultivating the true senna of Arabia, in the Southern part of the Indian peninsula; it is sincerely to be hoped, that it may soon become general throughout our Asiatic territories. The Arabians place senna amongst their *Mooshilāt sowda* مسهلات سودا (Melanogoga), and sometimes give it the name of *heyjasie* حجازي, prescribing the infusion in doses of 6 or 7 direms. Thirty-four species of Cassia were growing in the botanical garden of Calcutta in 1814, twenty-four of which were oriental plants: fourteen species grow in Ceylon.

Loiseleur Deslongchamps, in his "Manuel des Plantes Usuelles Indigenes" (p. 30. of the 2d. Memoir, vol. ii.), gives us no fewer than six different plants which might be substituted for senna; viz. globularia alypum (Lin.), anagyris fætida (Lin.), three species of daphne, and the cneorum tricoccon (Lin.), the best of which seems to us the first; three drachms of the leaves, in decoction, produced ten evacuations. In America and the West Indies, the two species, cassia emarginata, and c. marylandica, are both occasionally used as senna.

Senna leaves, according to Legrange (Annales de Chemie xxvi.), would seem to be characterized by a peculiar extractive matter, which, on being boiled for a long time, passes into a resinous substance by absorbing oxygen; they at the same time contain a resin, which resists the action of water, but is soluble in alcohol. * The officinal preparations of senna,

* See Brande's Manual of Chemistry, vol. iii. p. 116.

are, *extract. cassiæ sennæ*, *infus. sennæ*, already mentioned; *infus. sennæ composit.* dose from ʒij. to ʒiv.; *pulv. sennæ composit.* from ϑi. to ʒi.; *tinct. sennæ* from ʒij. to ʒi.; *syrup. sennæ* from ʒi. to ʒij.*; and *conf. sennæ* from ʒi. to ʒv.

The Cassia senna "seldom rises higher than two feet and a half; the leaves are pinnate, and placed in alternate order; the leaflets, of which each leaf has five or six pairs, are sessile, oval, pointed, and of a yellowish-green colour; the flowers yellow; and the fruit an ovate membraneous leafy compressed legume."

I perceive, Dr. Paris, in his Pharmalogia, p. 513. informs us, that senna leaves are adulterated with those of the chynanchum oleafolium (arguel), and those of the colutea arborescens.

CCVI.

SNIPE. *Woolàn* உள்ளான் (Tam.) *Toongha kodu* (Tel.) *Punkookrie* پنی کوکری (Duk.) *Punkoul* (Hind.) *Becassine* (Fr.) كندى *Kundidie* (Mal.) *Beccaccino* (It.) *Sha-chuy* (Chin.)

SCOLOPAX GALLINAGO (Lath.)

The snipe is a common bird all over India, and is considered as one of the greatest delicacies by the European inhabitants. The Mahometans consider the flesh of the snipe as possessing tonic and stimulating qualities. The Jack snipe (scolopax gallinula)

* *Lassaigne* and *Feneulle* seem to be of opinion, that the activity of senna depends upon the presence of a peculiar vegetable principle, which they have termed *cathartine*. See Annales de Chemie et Physique, tome xvi. p. 16.

is not near so common as the other species, and is a much smaller bird. What is termed the painted snipe by the English in India is a most beautiful bird, with a lovely variegated plumage. It is, I believe, the s. *capensis* of Latham; it is a larger bird than either of the species just mentioned, and its flight more resembles that of the woodcock, than the snipe; it has, however, the cry of the snipe on rising, but of a deeper tone. The Tamools name it *segapoo mookoolàn*, in Tellinghoo it is *kussoo kodie*. The Hindoos recommend the flesh of the snipe in incontinence of urine!

In a manuscript volume* in the India house, composed chiefly, I believe, by Dr. F. Hamilton, I find no less than nine species of scolopax described as Indian birds. Dr. Horsfield has given us with his usual accuracy two species as Javanese birds; the s. saturati (Horsf.) which is the tekker (Jav.), and the s. gallinago, the *burchet* (Jav.)

CCVII.

SOAP, INDIAN. *Nāt sowcarum* நாட்டுசவுக்காரம் (Tam.) *Saboon* صابون (Arab. and Duk.) *Savon* (Fr.) *Seife* (Ger.) *Sapone* (It.) *Sujah* صجع (Mal.) *Saboon* صابون (Mal.)

This inferior kind† of soap, and which is com-

* I hope to be excused for now expressing a regret, that the valuable contents of this volume have not been given to the public.

† In the days of Pliny, soap seems to have been made with goat's tallow, and the ashes of the beech tree: "*Optimus fagino et caprino, &c.*," Pliny, xviii. sect. 51. p. 475. Avicenna was well acquainted with its aperient qualities: "Crudum humorem dejicit per alvium." Canon. lib. ii. tract ii. p. 251.

monly called by the English in India *country soap*, is employed by the *Vytians* as a medicine; and is prescribed by them in *cómmé vāivoo* (tympanites), in which disease they suppose it to have particular virtues. The different articles employed in the preparation of it are, *overmunnoo* (Tam.) (an impure carbonate of soda), *poonheer** (Tam.), a light coloured earth containing a great proportion of carbonate of soda), *pottle ooppoo* (salt petre), and *chunamboo* (quick lime). Proper proportions of each of these having been selected, they are all bruised together, and to the whole is added a certain quantity of fresh water; then the mixture is well agitated for many hours, and allowed to stand for three days: the feculent matter having fallen to the bottom, the clear part is strained off, and boiled to form the *sowcarum*, a sufficient quantity of *gingilie* oil (sesamum Orientale) having been previously added when it began first to boil. It will easily be seen how coarse and imperfect this soap must be, when compared with the *sapo durus* (Lond.), which is manufactured in Spain. The best soaps in Europe are made with olive oil and soda. *Soft* soap is a compound of potassa and some of the common oils, even fish oil is often used for this purpose. Pelletier made 100 parts of new soap, to consist of 60·94 oil, 8·56 alkali, and 30·50 water.

* Resembling, in its nature, that species of impure fossil alkali, called *trona*, at Tripoli, which is found near the surface of the earth, in the province of *Mendrab*, and which the Africans of Morocco use in the process of dyeing leather red. See Lucas's Travels in the Interior of Africa.

CCVIII.

SOLE FISH. *Naak meen* நாக்மீன் (Tam.) *Kowlie mutchie* كهولي مچهي (Duk.) *Ecan léda* (Mal.) *Sole* (Fr.) *Sogliola* (It.) also *Caddil naakmeen* (Tam.) also *Iríminnāāk meen* (Tam.) also *Byns ke jéb* بينس کي جيب (Duk.) *Mandel meen* (Malealie).

PLEURONECTES SOLEA.

The sole in India is reckoned amongst the best of all the fish kind, being at once light, extremely nutritive, delicate, and one of those that may with the greatest safety be given to people of weak digestions. Soles are common both on the Coromandel and Malabar coasts; in the last mentioned country they are particularly large, and are called *Māndell meen* by the Tamools. The genus pleuronectes is distinguished by pectoral fins, and both eyes on the the same side of the head; it contains no less than forty species, and derives its name from πλευρον *latus*, and νεκτης *natator*. The sole fish is highly esteemed by the Chinese, who call it *ta-sha*.

CCIX.

SODA, IMPURE CARBONATE OF. *Kārum* காரம் (Tam.) also *Poonheer kārum* (Tam.) *Kār* کار (Hind.) also *Sédgie múttie* (Hind.) also *Sagilon*, also *Chínkálōōn* (Hind.) *Súját cārá* (Can.) *Boonírоo* (Tel.) *Chárum* (Mal.) *Sarjica* सर्जिका

also *Sarjikāshára* सर्जिकाक्षार (Sans.) *Savittie-munnoo ooppoo* (Tel.) *Júmed chénee* جمد چيني (Arab.) *Carbonate de soude* (Fr.) *Kohlensaures natrum* (Ger.) *Carbonato di soda* (It.)

CARBONAS SODÆ IMPURA.

Some of the more enlightened *Vytians* know well how to prepare carbonate of soda from the earths which contain it, (and which abound in many parts of Lower India,) such as *overmunnoo* *, and *poonheer*.† The soda prepared from the first mentioned earth‡, is called in Dukhanie *chowr ké muttiaka nemuck;* that from the second *chowr ké pool ka némuck*, the most common name of which is *valéiel ooppoo*, so named from the circumstance of its being employed in the manufacture of glass bracelets. In Tellingoo it is *gaz ooppoo*, and in Sanscrit *kāchil lávánum;* as it is found in the bazar, it is in regular whitish cakes about the third part of an inch thick, and appears to contain much muriate of soda.

The native practitioners of India suppose it to have virtues in dropsy, particularly in *maghodrum* (ascites); it is also used in glass and soap making (see article *Karum* in another part of this work). The subcarbonate of soda is not of so acrid a nature as the subcarbonate of potass, and is antacid and

* Called in Hindoostanie *réh mittie*, in Canarese *soula munnu*, in Tellinghoo *savittie munnoo*, and in Sanscrit *ossara*.

† A very light, white coloured, earthy matter, containing a great proportion of carbonate of soda.

‡ We learn from the Transactions of the Bombay Literary Society, vol. iii. p. 53., that carbonate of soda was found by Captain J. Stewart, on the ground, on the banks of the *Chumbul* river, near the village of *Peeplouda*, just where the *Chaumlee* and *Chumbul* join.

deobstruent; it is in consequence much employed in dyspepsia, acidities of the stomach, and scrophulous affections. With regard to its good effects in hooping cough, which disease it has been thought to have the power of checking, I cannot speak with much confidence; the mode of giving it in that complaint, recommended by Dr. Thomson, is first in combination with ipecacuanha and opium, and afterwards with myrrh and cinchona. The dose of this salt is from gr. x. to ℈ij. or more, twice or thrice daily.

I have hitherto only mentioned the carbonate of soda that is obtained from certain earths in India, in the same way as we also know it to be in Egypt, where it is termed *trōna* by the natives. Most of this salt, however, used in Europe, is of a vegetable origin, chiefly procured from the ashes of various *algæ*, especially from those of the salsola soda, a plant cultivated on the shores of the Mediterranean Sea; what of it is thus * got, is the *barilla* of commerce. What is made in England by burning the sea-wrack (mostly the fucus vesiculossus) is called *kelp*.

Oomarie chārum is the name given on the Malabar coast, to the ashes of a burnt sea plant, bearing a yellow flower, and which, on examining, I found to be the salsola Indica. These ashes are used by the inhabitants in the process of dyeing and bleaching cloth; and no doubt act by means of the soda they contain. The plant does not differ materially from the salsola soda, already mentioned; and which, by

* In the days of Pliny, a mineral alkali appears to have been prepared in Egypt from the ashes of certain plants; and Strabo, as cited by Beckman, mentions an alkaline water in Armenia, used for washing clothes. History of Inventions, vol. iii. p. 233.

the way grows at the Cape of Good Hope *, and is there called by the Hottentots *canna*.

There are other plants in India used for the purpose of burning, to procure ashes containing soda; their names are *narie oomarie* (Tam.) (salsola nudiflora), *oomarie márúm* (Tam.) (salsola elata (Rottler), and *pághárá, poondoo* (Tam.), *salicornia Indica*, which differs but little from the two glassworts, *salicornia perennans*, and *sal. fruticosa*, which are burnt in Europe to procure soda for making soap and glass.

I shall conclude this article by observing, that the aqua supercarbonatis sodæ, in doses of a pint or more, twice daily, is an excellent medicine in cases of acidity in the stomach, and calculous complaints; half a pint of it poured over two table spoonsful of lemon juice, sweetened with a little sugar, forms a pleasant effervescing draught.

CCX.

SORREL, *Sookan keeray* சுகன கீரை (Tam.) *Chukka* చుక్క (Duk.) *Kātoo tumpala* (Cyng.) *Chukrikā* चुक्रिका *Satavēdhī* शतवेधी (Sans.) *Chooka palung* (Beng.) *Chewka* (Hindooie). *Turshéh* ترشه (Pers.) *Soori* (Cyng.) *Acetosa* (It.) *Oseille* (Fr.)

RUMEX VESICARIUS (Lin.)

* Where, according to Burchell's account (Travels in Southern Africa), the ashes of the salsola aphylla are used by the Dutch colonists as an alkali in soap making (see his work, vol. i. p. 419.).

Cl. and Ord. Hexandria Trigynia. Nat. Ord. Holoraciæ.

The rumex vesicarius has obtained the name of sorrel in India, owing to its resemblance to the rumex acetosa, in taste and other qualities; it is an article of diet, and is considered by the natives as cooling and aperient, and to a certain extent diuretic. It is, I am inclined to think, the same species that is common in Arabia, where it is a favorite medicine, and called by the names of *hubuck khorasānee* حبق خراساني and *humaz* حماض. It is also a native of Egypt, and termed by the Arabs there حمبجيط. *humbéjeet.*

The use of sorrel was known to the ancients; Pliny was of opinion that it rendered animal food lighter of digestion. Boerhaave extolled its virtues for hot putrid constitutions. On the continent of Europe, such as in Switzerland, an essential salt *, called salt of sorrel, is prepared from the r. acetosa. Savary in his "Desertatio Inauguralis de Sale Essent. acetosæ, Argentor 1773," says, that fifty pounds of sorrel produce only two ounces and a half of pure salt. What is termed oxalic acid in England is found in great quantity in the juice of the oxalis acetosella or wood sorrel, also in some fruits and rhubarbs. Mr. Brande tells us, that it is most readily procured by the action of nitric acid upon sugar, and has hence been named *acid of sugar*†; procured in this way, it is in the form of four-sided prisms, transparent, and extremely acid, and composed, according to Brezelius, of real acid 52, and water 48 parts. The difference betwixt the common sorrel (rumex acetosa) and our

* See Phillip's History of Cultivated Vegetables, vol. ii. p. 221.

† A name, I am sorry to say, which often leads to fatal consequences.

article is, that the first has flowers hermaphrodite, gemenite, with leaves undivided; the last, flowers dioecous, leaves oblong, sagittate. The Peruvians, according to the Flora Peruviana, give an infusion of sorrel in cases of depraved habit of body; the natives call it *acelgas*. In Chili it is called *gualtata*.

CCXI.

SOUTHERNWOOD, INDIAN. *Mărikólindoo* மரிகொலுந்து (Tam.) *Downah* (Duk.) *Dawanum* (Tel.) *Kysoom* قيصوم (Arab.) *Birunjasif* برنجاسف (Pers.) *Gundmar* (Hind.) *Dáwánákáhā* (Sans.)

ARTEMISIA AUSTRIACA (Lin.)

Cl. and Ord. Syngenesia Superflua. Nat. Ord. Compositæ Nucamentaceæ.

This species of wormwood has, improperly, got the name of Indian southernwood, by the European inhabitants on the Coromandel coast, from its resemblance to the artemisia abrotanum.* The Tamools sometimes mix the fine powder of the leaves with gingilie oil, and anoint themselves with it after bathing; the Mahometans prize it for its fragrance as a flower; it is one of those sweet-smelling herbs that are strewed before the Hindoo gods at religious ceremonies.

But two species of artemisia grow in Ceylon; the a. Indica (*wal-kolondu*), and a. maderaspatana (*wæl-kolondu*).

* Which is, however, I perceive, a native of Cochin-China (with five other species), and there called *thanh-hao*. Flor. Cochin-Chin. vol. ii. p. 490. It also grows in the island of Nipon, Flor. Japon. p. 309.

CCXII.

SPONGE. *Isfenj* اسفنج (Arab.) *Abermoordeh* ابرمردة (Pers.) *Mooàbadul* (Hind.) *Uniwatta* (Japan.) *Eponge* (Fr.) *Meerschwamm* (Ger.) *Spunga* (It.)

SPONGIA.

Sponge is sometimes, though rarely, exposed for sale in the bazars of Lower India; brought from the Red Sea. It was Mr. Ellis who first established the fact, that it actually was an animal *sui generis* (Philosoph. Transac. iv. p. 234.); though Blumenbauch, in his "Manuel d'Histoire Naturelle" (tom. ii. p. 87.), says, he doubts much whether sponge is really of the animal kingdom, as has been supposed. The spongia officinalis is found by the divers chiefly in the Mediterranean and Red Seas; generally attached to the bottom of the rocks. When properly prepared, it is very porous, light, soft, and of a brownish yellow colour.

The antacid properties of burnt sponge are sufficiently well ascertained, and its tonic and deobstruent qualities have been much vaunted; it has been recommended in scrophulous affections, bronchocele, and herpetic eruptions; and Dr. Thomson tells us, that he himself has witnessed its efficacy in schirrous testicle, in combination with the cinchona bark; the dose from ʒi. to ʒiij., in the form of an electuary. The ancients used sponge much in surgery: "Si vero tumores dolent, levat spongia imposita, quæ subinde ex oleo, et aceto, vel aqua frigida exprimitur" (Celsus, lib. iv. cap. xxiv.). Avicenna says of it:

"Spongia cum pice usta accommodatum est, sputo sanguinis præsidium." Canon. Med. lib. ii. tract ii. p. 47.

CCXIII.

SQUILL, substitute for. *Nurri vungÿum* நரிவெங்காயம் (Tam.) *Junglie piaz* جنگلي پياز (Duk.) *Unsool* عنصل (Arab.) also *Iskeel* اسقيل (Arab.) *Kanda* (Hind.) *Peyáz-ideshtee* پياز دشتي (Pers.) *Nurriala* (Cyng.) *Addivitella guddaloo* (Tel.)

ERYTHRONIUM INDICUM (Rottler).

Cl. and Ord. Hexandria Monogynia. Nat. Ord. Sarmentaceæ.

The bulbous root of the erythronium Indicum (Rottler), has got the name of squill in India, from its resemblance to the root of the scilla maritima in appearance and natural qualities; it does not grow so large as the squill, and is rounder in shape; but is formed in a similar manner, with fleshy scales, and is of a bitterish, nauseous, and acrid taste. This species of erythronium, would seem to have been first scientifically described by the excellent Dr. Rottler, of Madras; and appears to differ from the *erythronium dens canis*, in having longer and narrower leaves, with larger flowers of a paler colour. The true squill, or Σκιλλη of the Greeks, has been said to grow in Ceylon; though Dr. White, of Bombay, was of opinion, that this was not the case; but that the *amaryllis** zeylanica had been mistaken for the scilla maritima.

Our article is chiefly employed by the farriers for

* Which is the goda-manel of the Cyngalese.

horses, in cases of strangury and fever; it grows in abundance on waste sandy lands, in Lower India, especially in situations near the sea.

The Arabians and Persians place squills amongst their Discutientia, *Móhéllilāt* مهللات, and Attenuantia, *Mulúttifat* ملطفات.*

Of the true squill, to produce expectorant and diuretic effects, the substance is the best form; gr. i. in a pill morning and evening, gradually increasing the dose to gr. v. or gr. vi., until nausea is brought on, or its expectorant or diuretic operation is obtained. The dose of the *acetum scillæ*, to excite vomiting, is from half a drachm to one drachm and a half; that of the *oxymel* from half a drachm to ʒij.

The bulbous root of the scilla maritima contains, according to Vogel†, a bitter principle, to which he has given the name of *scillitin*, united with a gum, and much tannin.

Both Alibert and Roques speak of the occasional poisonous effects of squills, on animals; occasioning nausea, vomitings, vertigo, and violent convulsions if over-dosed. The latter observes, that, as a medicine, squills had great fame amongst the Egyptians; and was supposed, by Pythagoras, to have the power of prolonging life. Roques‡ thinks it more indicated in dropsy than any other malady.

* Rhazes says of it, "Scylla calida et acuta, hæc autem epilepsiæ, ac tumore splenis necnon, et ejus magnitudini atque viperarum morsibus, et dyspneæ vetustæ auxilium tribuit." Vide Oper. Rhaz. de Re Med. lib. iii. p. 79. Avicenna extols the many virtues of squills; externally, he says, it does good in epilepsy and melancholy, applied to the head: "Vim nacta est discussoriam et tam sanguinem, quam excrementa foras protrahit." Canon. Med. lib. ii. tract ji. p. 33.

† See Annales de Chimie, lxxxiv.

‡ See his admirable work, entitled Phytographie Medicale, vol. i. p. 102.

CCXIV.

STARCH. *Abgoon* ابگون (Arab.) *Neshasté* نشاسته (Pers.) *Geehoonkaheer* (Hindooie).

AMYLUM.

The Mahometans know well how to prepare starch from wheat as we do; they also sometimes make it from the large edible roots, such as from that of the *kooá* (Tam.), curcuma angustifolia, &c. The Arabians place starch amongst their Anodynes (*Mosuckenát owjá* مسکنات اوجاع), their Styptics, and their Astringents, *Kábizát* قابضات. Starch is chiefly used by European practitioners in the form of enema, for sheathing the rectum, in cases of abrasion, and inflammation of the gut; and for allaying the irritating effects of acrid bile. The conversion of starch into sugar is a curious fact, first discovered by *Mr. Kirchoff*, and subsequently confirmed by *M. M. de la Rive, Saussure,* and others. Perhaps the best analysis of starch is that by Berzelius:

Carbon - - - -	43·481
Oxygen - - - -	48·455
Hydrogen - - -	7·064
	100·000

See Thomson's Annals, vol. v.

CCXV.

STORAX, BALSAM. *Usteruk* اصطرک (Arab.) *Storax* (Fr.) *Storax* (Ger.) *Storace* (It.)
STYRAX OFFICINALE (Lin.)

Cl. and Ord. Decandria Monogynia. Nat. Ord. Bicornes.

Storax is seldom found in any of the Indian bazars, and appears to be only known to the Mahometan practitioners. Isteruk is, properly speaking, the Arabic name of the pure or tear storax; the red kind is in the same tongue called salajet سلاجت; the liquid storax* they term *silarus* سلارس; another Arabic name for storax is *meaht* میعة: they place it amongst their Stimulantia, *Mudorrāt* مدرات, and *Mosebetāt* مسبتات, Hypnotica.†

The styrax officinale grows in the Levant, seldom rising higher than twenty feet; with numerous branches, and covered with a grey bark, from which, by incisions, the storax issues. Storax is too well known to require being particularly described here; it has an agreeable odour, and a pleasant, subacidulous, aromatic, yet slightly pungent taste; it has been considered as stimulant and expectorant, but

* The liquid storax, or what the French call *liquidambar*, also *copalme*, Virey informs us, exudes, by incision, from the liquidambar styraciflua, a North American tree; but more likely, I think, from another, indeed, the only other species, l. imberbe, an oriental plant.

† Avicenna says of this substance, "Calidus est gradu tertio, siccus primo; calefacit, concoquit, emollit valde; tussi vaucæ et interceptæ voci prodest." Vide Canon. Med. lib. ii. tract ii. p. 41.

is now but little used in practice; the dose from gr. viii. to ʒij.

The physicians on the continent of Europe* consider storax as resembling the balsam of Peru in its nature, and think that it might be substituted for it. But this last mentioned substance possesses virtues, when applied externally, in arresting the progress of phagedenic ulcers and mortification, which are altogether peculiar to itself. Many are the lives I have saved by its use, in India, by having fortunately discovered that it had the specific quality of putting an immediate check to sphacelous affections, in cases in which every thing else had failed. I used it in this way; lint, drenched in the balsam, was applied morning and evening to the face of the sore, for three days together: sometimes by the end of the second day the face of the sore was clean.

CCXVI.

SUET, MUTTON. *Aatoo kóhúpoo* ஆட்டுகொழுப்பு (Tam.) *Vaynta-kovoo* (Tel.) *Lemāk* (Mal.) *Buckrékéchirbie* بكري كي چربي (Duk.) *Elloo muss tail* (Cyng.) *Addja vuppa* (Sans.)

SEVUM OVILLUM.

The native doctors employ this, as we do, in the preparation of ointments; they also administer it internally, in conjunction with the fruit of the *sūngā márúm* (monetia barlerioides), nutmeg, and cubebs, in cases of hemoptysis, and in certain stages of phthisis pulmonalis.

* See Murray's Appar. Med. vol. i. p. 114.

CCXVII.

SUGAR. *Sakkarā* சக்கரை (Tam.) *Sarkarā* शर्करा (Sans.) *Sucre* (Fr.) *Zucker* (Ger.) *Azucar* (Span.) *Shukkir* شکر (Pers. and Duk.) *Chénee* (Hindooie). *Goola* غولا (Mal.) *Pánchádárā* (Tel.) *Súkhir* سکر (Arab.) *Kussib sukhir* قصب سکر (Sugar cane, Arab.) *Saker* (Mah.) *Assucar* (Port.) *Zucchero* (It.)

SACCHARUM OFFICINARUM (Lin.)

Cl. and Ord. Triandria Digynia.

The author of the Remarks on the Husbandry and Internal Commerce of Bengal (p. 126.), seems to be of opinion, that the sugar-cane grew luxuriantly throughout Bengal, in the most remote ages (p. 126); and that from India* it was introduced into Europe and Africa; and it is a fact, that from the Sanscrit word for manufactured sugar (sakkara), are derived the Persian, Greek, Latin, and modern European names of the sugar-cane, and its produce: the same excellent author expresses a doubt, if the sugar-cane was indigenous in America†, as historical facts seem to contradict it. From *Benares* to *Rengpur*, from the borders of *Assam* to those of *Catac*, there is scarcely a district in Bengal, in which the sugar-cane

* In Japan it was found by Thunberg, there called by the natives kānsia, also sato dake. Flor. Jap. p. 42. Loureiro says of it, "habitat, in omnibus provinciis Cochin-Chinensis." Vide Flor. Cochin-Chin. vol. i. p. 52.

† The enlightened Humboldt tells us, that the Spaniards first imported the sugar-cane from the Canary Islands to St. Domingo; and that Peter D'Atienza planted the first sugar-canes, in 1520, at Conception de la Vega. See his Account of New Spain, vol. iii. p. 3., English translation.

does not flourish. The growth of sugar for home consumption in India is vast, and it only needs encouragement to equal the demand of Europe; but how far encouragement to this extent would be politic, having in view our West India Islands, is another question, and foreign to my pursuit.

The sugar-cane is also cultivated for the manufacture of sugar, in many parts of the territories belonging to the Madras establishment, as well as at Bombay; it is a product of various other Eastern countries; for instance, according to Crawfurd, three varieties are indigenous in the Indian Archipelago. Much sugar is made in Siam. On Java it was manufactured to a great extent by the Dutch, so much so, that in the province of Jaccatra* alone, in 1768, no less than thirteen millions of pounds were produced. The sugar of Lahore is of an excellent quality; it may be procured in any quantity in the Philippine Islands, but little of it is exported by the Spaniards. In Persia, in the province of Kuzistan, it is successfully cultivated.†

The Hindoos value sugar very highly: in its unrefined state it is offered at the shrines of their gods; it is presented by inferiors to superiors as a mark of respect; and is considered by the *Vytians* as extremely nutritious, pectoral, and anthelmintic. The Arabians reckon it detergent and emollient‡, in doses of twenty direms. Dr. Cullen classes it with

* See Sketches Civil and Military of Java, p. 40.

† In the days of Pliny, sugar appears to have been brought to Rome from Arabia and India (Nat. Hist. lib. xii. cap. viii.). The Arabians, in the days of Avicenna, had some singular notions regarding it: "Utile est ventriculo, qui bilis non ferax, huic enem nocet, quod videlicet facile in bilem facessat." Vide Canon. Med. lib. ii. tract ii.

‡ See Materia Medica, by Noureddeen Mahammed Abdulla Shirazy, article 1015.

his Attenuantia. Bergius states it to be "saponacea, edulcorans, relaxans, pectoralis, vulneraria, antiseptica, et nutriens;" of the two last there is no doubt, and that it is pectoral, we trust will as readily be allowed. It has, besides, been supposed to have virtues in calculous complaints.

The species of saccharum from which the Chinese procure their sugar, is the s. sinense (Roxb.), and the تبو of the Malays; it yields sugar of a much richer quality than the Indian cane, and continues to produce even to the third year, while the other must be renewed yearly (see Flora Indica, pp. 244, 245.). This species (s. sinense) seems to differ from the s. officinarum chiefly in having the FLAT LEAVES with hispid margins, and a corol of two valves on the same side; the other has a one-valved corol. The Sanscrit name of the s. officinarum is *ikshoo*, it is *ook* (Beng.), and *chérúkoo bodi* (Tel.). Ten species of saccharum were growing in the botanical garden of Calcutta in 1814, all of which are oriental plants. Besides the sugar procured from the common sugar-cane, this useful article is obtained in India from other sources; such as from the toddy of the cocoa-nut. This kind of sugar is called *ténné véllum* (Tam.); *naril ka goor* ناریل کا گوڑ (Duk.); *tenkāiabéllum* (Tel.). The sugar got from the toddy of the caryota urens is called in Tamool *koondél pánei vellum*. Then again, that sugar prepared from the toddy of the palmyra tree (borassus flabelliformis) is termed in Tamool *pannay véllum;* in Dukhanie *tār ka goor* تاڑ کا گوڑ; and in Tellingoo *tātie bellum*. All these sugars are common in the bazars of India; they are altogether unrefined, and known by the English under the general name of *jaggéries*, which is also applied to common coarse sugar.

Sugar, as analysed by Thénard, consists of

Carbon - - - -	42·47
Oxygen - - - -	50·63
Hydrogen - - - -	6·90
	100·0

According to Berzelius:

Carbon - - - -	44·5
Oxygen - - - -	49·4
Hydrogen - - - -	6·1
	100·0

I shall conclude this article by observing, that in *Bengal* there are three varieties of the sugar-cane cultivated*: the *poori*, the *kajooli*, and the *kullooa*. The second of these, or purple cane, produces the sweetest sugar; the first, or yellow cane, yields the next best; the last, or light-coloured cane, yields a sugar which is of inferior quality. In Mysore two kinds of sugar cane are chiefly cultivated, the *restali* and *puttaputti*, both yield *bella* or *jaggery*. The *restali* will not survive for a second crop; but the *puttaputti* may be followed by a second reaping. The jaggery of the sugar-cane is called in Tamool *nulla vellum*, from being the best; that of Palmyra toddy is termed *karapootie* (Tam.)

For an account of the different modes of cultivating the sugar-cane, and manufacturing sugar in

* In Ceylon five species of saccharum grow: the s. officinarum is there called in Cyngalese *uk-gas*; there are three varieties, the common, white, and purple. See Moon's Catalogue of Cyngalese Plants, p. 7.

the East and West Indies, the reader may consult the Asiatic Journal for April, 1823, p. 336.

CCXVIII.

SULPHUR. *Gendagum* கெந்தகம் (Tam.) *Ghendagum* (Tel.) *Gunduck* گندک (Duk.) *Kábrit* كبريت (Arab.) *Gowgird* گوگرد (Pers.) *Gundhuc* (Hindooie). *Blerong* (Mal.) *Gúndáká* (Cyng.) *Gandhaka* (Sans.) *Soufre* (Fr.). *Schwefel* (Ger.) *Zolfo* (It.) *Gunduk* (Mah.) *Lew* (Chin.)

SULPHUR.

This would appear to be a very uncommon production in India; we are told that about thirty miles North of *Oudipoor* * in Upper Hindoostan it is met with, but of a quality inferior to that which is brought from the gulph of Cutch and Persia. In Travancore it has, I understand, been discovered by Captain Arthur, in combination with iron (in the form of pyrites). In *Colioti*, in Canara too, I am informed that it is to be found. Dr. Heyne tells us, in his Tracts Historical and Statistical of India" (p. 186, 187), that he met with sulphur in small heaps, and in tolerable abundance, at the Northern extremity of a lake which is near a small village called *Sura-sany-yanam*, about twelve miles East from *Ammalapore*, and not far from *Maddepolam*; it was in a loose, soft form, or in semi-indurated nodules of a greyish yellow colour. The greater part of the sulphur, however, which is exposed for sale in the

* See Asiatic Journal for Dec. 1824.

Indian provinces, is brought from Muscat, from Sumatra*, or from the Banda Island, called *Gonongapi*, where it is a volcanic production. In China, Dr. Abel had some most beautiful and splendid native sulphur brought to him, from the crater of *Gunong Karang*. Sonnerat informs us, that it is common at Pegu †, and we know that it is a product of the Philippine Islands ‡, particularly in the island of *Leyte*, whence the gunpowder works of Manilla are supplied. Most of the sulphur we get in Hindoostan contains a considerable portion of orpiment, being much less pure than either that which is dug out of the solfatara, near Naples, or that imported from Sicily; which last, Dr. Thomson says, contains seldom more of impurity than about three per cent. of a simple earth. A bright-shining yellow sulphur is sold in the bazars of Lower India, under the name of *nellikāi ghéndágúm* (Tam.). By Dr. F. Hamilton's excellent Account of Nepaul (p. 78.), it appears that sulphur mines are there numerous; this useful article is also found in Persia, in mountains behind *Tehrān* and in the same country, in mountains South of *Kelāt* in the province of *Mekran*. § It is met with in Cabul in the district of *Bulkh* ‖, it is also a product of *Armenia* ¶, of *Moultan* **, of China, and Thibet ††; also, according to Morier ‡‡, at *Bahouba* in Persia, in the district of *Kaleat*. With regard to

* See Elmore's Guide to the Indian Trade, p. 57.
† See Sonnerat's Voyage to the East Indies, vol. iii. p. 26.
‡ See De Comyn's State of the Philippine Islands, p. 37.
§ See Macdonald Kinneir's Geographical Memoir of Persia, pp. 40 and 224.
‖ See Elphinston's Account of Cabul, p. 146.
¶ See Geographical Memoir of Persia, p. 319.
** See Pennant's View of Hindoostan, vol. i. p. 37.
†† See Kirkpatrick's Account of Nepaul, p. 206.
‡‡ See Morier's First Journey through Persia, p. 284.

the Indian Islands, Mr. Crawfurd, in his History of the Indian Archipelago, says (vol. i. pp. 201, 202.) that sulphur is found in all the pseudo volcanoes of these islands in great purity, but that the manufacture of gun-powder amongst the Malays is very imperfect; this they call *ubat-badel.* Mr. Hughes, in his valuable Travels in Sicily, Greece, and Albania, informs us, that in the first-mentioned country, the stone sulphur is dug out of a mountain near *Palma,* on the road to *Alicata,* about twenty-two miles South of Girgenti (see work, vol. i. p. 14.).

Sulphur is much used by the Hindoo doctors, as well as by the Mahometan practitioners, in cases of itch, and other cutaneous affections, mixed commonly with the powdered seeds of the *cārin siragum* (nigella sativa), and gingilie oil; they also prescribe it internally for the *koostum* (lepra Arabum), for the *kirandi* (venereal herpes), and for that contracted state of the limbs, they call *shoolay kuttoo.* By European medical men, this well known substance is employed as a laxative medicine and stimulating diaphoretic; and would appear to be particularly indicated as an aperient in hæmorrhoidal affections from the gentleness of its operation: dose from ℈ij. to ʒiij. made into an electuary with syrup, or it may be taken in milk. Physicians on the European continent, such as *Sœmmering,* consider sulphur as possessing virtues in diseases of the absorbents. *Barthez* on the other hand supposed it to be peculiarly useful in the gout. Dr. Thomson cautions us against the exhaustion it is so apt to induce; and therefore, when employed in conjunction with squills in dropsical cases, recommends that its use should be followed by a course of tonics. Of this medicine Celsus

says, "*Conquit et movet pus; aperit vulnera, purgat, exedit corpus.*"

Sulphur is too well known to require a particular description. Its specific gravity is 1·990; by friction it becomes negatively electrical; it is principally a mineral product, and occurs crystallized. It is met with in *masses*; in which state it is chiefly brought from Sicily. In *rolls* or *sticks* (as obtained in England from roasting pyrites), if grasped by a warm hand it crackles. In the form of *powder* it it is called *flowers of sulphur* or *sublimed sulphur*; what is termed *milk of sulphur*, is when it has been precipitated for pharmaceutical purposes, from alcaline solutions, by an acid, and subsequently washed and dried. Sulphur if pure, when heating gradually on a piece of platinum leaf will totally evaporate, and is perfectly soluble in boiling oil of turpentine (see Brande's Manual of Chemistry, vol. i. pp. 386, 387). Sulphur is spoken of by Hippocrates under the name of Θειον *; and was prescribed by him and his followers in asthma and cutaneous complaints.

CCXIX.

SUMACH, ELM LEAVED. *Sumak* سماق (Pers.) *Tumtum* تمتم (Arab.)

RHUS CORIARIA (Lin.)

Cl. and Ord. Pentandria Trigynia. Nat. Ord. Dumosæ.

* See an account of Dierbach's Materia Medica of Hippocrates, in that most valuable publication, the Edinburgh Medical and Surgical Journal, for July 1825, p. 158.

The rhus coriaria does not grow in India; but I perceive that the plant has a place in the Ulfaz Udwiyeh, and is therefore known in the higher tracts of Hindoostan. It is a native of Persia, Syria, Palestine, as well as of Spain, France and Portugal. The Syrians employ the leaf and seeds in medicine; considering them as useful styptics and astringents. The Tripoli merchants sell them at Aleppo, where they are taken internally by the inhabitants, with a view of provoking an appetite. In Spain, Portugal, and especially in France (about Montpelier, where the plant is called *redoul*) it is cultivated with great care, its shoots being employed for the purpose of tanning leather. Sumach is no longer an article of our Materia Medica. We are informed by Virey in his "Histoire Naturelle des Médicamens" (p. 288), that this plant, which the French curriers term *roure*, is considered as antiseptic; and that it is useful in dysentery and scorbutic complaints. The fruit is acid and astringent, and at one time was much employed in dysentery, in France, in doses, of the substance, of gr. xxiv., also in decoction. The bark of the stem is a yellow dye, that of the root a brown.*

The rhus coriaria has a strong woody stem, with many irregular branches; the leaves are composed of seven or eight pairs of leaflets, terminated by an odd one. The leaflets are about two inches long, and of a yellowish-green colour. The flowers grow on loose panicles, at the end of the branches; and are of a whitish herbaceous colour.

Of all astringents sumach* bears the greatest resemblance to galls. Alone it gives a fawn-colour to

* See Deslongchamp's Manuel des Plantes Usuelles Indigenes, vol. i. p. 163.

green; but cotton stuffs which have been impregnated with printers' mordant (that is acetate of alumine), take with it a pretty good and durable yellow. It is with the branches of this plant that Turkey leather is tanned. The leaves and seeds of the coriaria myrtifolia may be employed like sumach in tanning and dyeing. The Arabians place the seeds and leaves of sumach amongst their *Kabizat* قابضات Astringentia, and Tonics مقويات معدة. Of the styptic virtues of the leaves of the sumach amongst the ancients, the reader will find some account in Dioscorides (Mat. Med. lib. i. cap. 147.) The species toxicodendron or *poison oak*, is an article of the British Materia Medica.†

CCXX.

SWALLOW-WORT, GIGANTIC. See article *Yercum vayr*, and its use in leprous affections in this part of the work.

CCXXI.

SWEET FLAG, ROOT OF. *Vassamboo* வசம்பு (Tam.) *Butch* बच (Duk.) *Vudge* (Pers.)

* The shoots are cut down every year quite to the root, carefully dried, and reduced to powder by a mill, and thus prepared for the purpose of dyeing and tanning. The rhus vernix, which yields, on being wounded, the real Japan varnish, grows in Japan, in the province of Itsikoka and Figo (Flor. Japon. p. 121.). The species Javanicum is the *xiong tsat* of the Chinese, who extract an oil from its berry, which they use as a varnish. Vide Flor. Cochin-Chin. vol. i. p. 183.

† The powder of the leaves is given in palsy, in the quantity of from gr. iss. to gr. iv. In the Medical and Surgical Journal, for July 1825, p. 82, a case is detailed, of the good effects of the tincture in palsy; a drop night and morning, increasing the dose to ten drops.

Bach (Hindooie). *Vachā* वचा (Sans.) also *Haimāvatī** हैमावती (Sans.) *Shwet buch* (Beng.) *Vudza* (Tel.) also *Gōlōmi* (Sans.) *Wadda kaha* (Cyng.) *Bagy* (Can.) *Kawa sob* (Japan.) *Dringo* (Port.) *Vaymboo* (Malealie). also *Vaesambu*, also *Wadakaha* (Cyng.) *Acorus odorant* (Fr.) *Kalmus Wurtzil* (Ger.) *Calamo aromatico* (It.) *Kusseb béwa* قصب بوا (Hind.) also *Igir* اڭكر *Thach-xuog-bo* (Coch. Chin.) *Kusset alderireh* قصت الدريره (Egypt. Arab.)

ACORUS CALAMUS (Lin.)

Cl. and Ord. Hexandria Monogynia. Nat. Ord. Piperitæ.

This root, as it appears in the Indian bazars, differs in nothing from what is met with in the shops in Europe; it has, in its dried state, a wrinkled cuticle of a pale brown colour, with numerous white elevated circles on the under side, whence the radical fibres issued; it breaks short, and its rind is of a buff colour, and softish texture; the smell is pleasant and aromatic; the taste bitterish, warm, and, to a certain degree, pungent and aromatic. It is a very favourite medicine of the Indian practitioners, and is reckoned so valuable in the indigestions, stomach-aches, and bowel affections of children, that there is a penalty incurred by any druggist who will not open his door in the middle of the night and sell it if demanded. It grows in abundance in many parts of India. Rheede† tells us, that on the Malabar coast it is called *vaembu*, and that a bath made of an in-

* This properly speaking is the white variety.

† Hort. Mal. part ii. p. 99.

fusion of the root, is there considered as an efficacious remedy for epilepsy in children. The plant اكر *igir* is an export from Mocha, and is much prized by the modern Arabians and Persians, who place the root amongst their Aphrodisiacs and Carminatives, مبهيات and مغشيات. Shroder (p. 526.) informs us, that it possesses virtues in obstructions of the menses, spleen, and liver. On Jáva it is known by the name of *deringo*. The Egyptians, who call it *cassabel bamira* كاسبل بامبرا*, hold it in high estimation as an aromatic and stomachic. The Turks candy the roots, and regard them as a preventative against contagion. The variety of the acorus calamus, in America, appears to differ but little from the Europe or Asiatic plant. Dr. Barton, in his Vegetable Materia Medica of the United States, says, that the root is there considered as a valuable carminative and stomachic; the same excellent author tells us, that Beckstein observes, that the leaves are noxious to insects, and that no kind of cattle will eat any part of the plant. *Bautroth* has used the whole plant for tanning leather, and Bohmer is of opinion, that the French snuff receives its peculiar flavour from the root of it.†

European practitioners have considered the root of the sweet flag as tonic and aromatic; and occasionally prescribe it in cases of intermittent fever‡ and dyspepsia, in doses of from ℈i. to ʒi. of the substance; or, in infusion, to the extent of a cupfull

* I find this article noticed by Avicenna under the name of كاسبلا لك ساريرا, he says of it, "menses urinasque provocat; tussi suffitu medetur tam per se, tam etiam cum resina terebinthinia, ore nimirum hausto per fistulam fumo." Vide Canon. Med. lib. ii. tract ii. p. 255.

† See Barton's Vegetable Materia Medica of the United States, vol. ii. p. 69. 71. 73.

‡ Withering gives a faithful account of the plant.

twice daily (ʒvi. of the bruised root to ℥xii. of boiling water).

The acorus calamus, which appears to grow in many different parts of the world, "has leaves which spring from the root, they are sword-shaped, about three feet in length; the flowers are small, and are produced on a close tessellated conical spike about four inches long, they have no calyx, the petals are six in number, and of a pale-green colour." Thunberg found the plant growing near *Nagasaki*, in Japan, also near the temple of Meosus (Flor. Japon. p. 144.). Loureiro says, it grows in mountainous tracts of Cochin-China; of it, he observes, "vocem, auditum, et visum acuit, contra melancholiam, et vertiginem prodest." Flor. Cochin-Chin. vol. i. p. 208.

CCXXII.

TABASHEER. *Moonghil ooppoo* மூங்கில் உப்பு (Tam.) *Tăbā-sheer* طبا شیر (Arab. and Duk.) *Tăbāsheer* طبا شیر (Pers.) *Védúroo ooppoo* (Tel.) *Bansk* (Beng.) *Twak-kshīrā* त्वक्क्षीरा (Sans.) *Oonamakoo* (Cyng.) also *Una-lee*. *Chuh-hwang* (Chin.)

BAMBUSA ARUNDINACEA (Schreb.)

Cl. and Ord. Hexandria Monogynia. Nat. Ord. Gramina.

Tabasheer is very scarce in many parts of Hindoostan, and appears to be only found in the female bamboos growing in certain tracts; it is a blueish white, concrete, light substance, which sticks to the tongue, and is of a very singular nature, considering its vegetable origin, as it resists acids, is undestructible by fire, and forms, on being fused with alkalies,

a sort of glass; so far resembling silex. It is much esteemed by the Hindoos as a medicine, particularly amongst the Gentoos of the Northern Circars, who consider it as a powerful tonic, and to have great efficacy in internal bruises. The Persians prize it for its cardiac and strengthening qualities, and, according to Dr. Russel's account, have it brought into their country from Sylhat, and other parts of India; as a medicine it is also employed by the Turks and Syrians. The Arabians, who call the tree which yields it *kussib* قصب, and the tabasheer *ussul al kussib* عسل القصب*, or honey of the bamboo; place the latter amongst their *Kabizat* قابضات (Astringentia), and *Mokewyāt dil* مقويات دل (Cardiaca).

Tabasheer would seem to have been first brought to the notice of Europeans by Dr. Patrick Russel; Dr. Brewster made it the subject of a paper for the Transactions of the Royal Society for 1819.† From the analysis of Mr. Macie (now Smithson), it would appear to be first liquid, and gradually to become thick and dry; in which state, strange to say, it is identical with common silicious earth. Humboldt found tabasheer in the bamboos of *Pinchincha*, and a portion of what he brought home with him from America, in 1804, when examined by Vauquelin, consisted of seventy parts of silex, and thirty of potash. Roxburgh, in his "Coromandel Plants," tells us, that much tabasheer, of a saline crystallization, is obtained from the bambusa baccifera (Roxb.) (a very curious plant), and is called by the natives *chuna*, or lime. This species of bamboo is the *beesha*

* See Avicenna, p. 225., also Historia rei Herbariæ, vol. i. p. 256.

† In which paper he describes the peculiar optical properties of silica obtained from it.

of Rheede (Hort. Mal. vol. v. p. 119.), and is called at Chittagong *payululu*. Seven species of bambusa were growing in the botanical garden of Calcutta in 1814, all Indian plants, except the *nana*, introduced from China in 1794.

Four species of bambusa grow in Ceylon: viz. our present article, and the *b. spinosa*, *b. stridula*, and *b. nana*; of the *b. arundinacea* there are three varieties, the common, the yellow, and the green. Six species grow in Cochin-China, amongst which are the verus and rudentem. (Flor. Cochin-Chin. vol. i. p. 209.)

CCXXIII.

TALC. *Appracum* அப்ராகம் (Tam.) *Abraka* अभ्रक (Sans.) *Appracum* (Tel.) *Tulk* طلق (Pers. and Duk.) *Ubruk* (Hindooie). *Kokubulurz* كوكب الارض *Minirum* (Cyng.)

TALCUM.

The Hindoos, and Mahometans of Lower India, like Cronstedt, and some others, confound talc and mica together. Dr. Kirwan, and subsequently Mr. Murray, have classed the first under the magnesian earths, and the latter under the silicious. The last mentioned celebrated chemist distinguishing the talc by its unctuous feel, and by its plates being flexible, but not elastic; Jameson says, that it is also to be distinguished by its inferior hardness.

A kind of apple-green coloured talc, called by the Tamools *mungil appracum*, and in Dukhanie *péela tŭlk* پيلا طلق, may, by inaccurate observers, be mistaken for the golden-coloured orpiment. Its beauti-

ful translucent flakes are used by the native Indians for ornamenting many of the baubles employed in their ceremonies; they also, like the Chinese, consider it as possessing medicinal qualities: the former suppose it to have virtues taken, internally, in pulmonic affections; the latter imagine it to have the power of prolonging life.

Several varieties of talc and mica are found in India and Ceylon: of the first, Kirkpatrick tells us, there is abundance in Nepaul (see work, p. 109.), particularly in the beds of streams which spring from the South face of the *Koomrah* mountains; the most esteemed by the natives is a dark-coloured sort, *koushno abruk*. The common grey mica (glimmer of Werner) is in Tamool called *vullay appracum*, and in Hindoostanie *suffiad túlk;* this, and another darker species of mica, termed by the Tamools *kistnah appracum*, are prescribed by the *Vytians*, in small doses, in flux cases! they are also employed for ornamenting fans, pictures, &c. On Ceylon the Cyngalese call them *mirinam*, and decorate their umbrellas (tálpāts) with them. The white and yellow micas, in powder, are used for sanding writing while wet; by the names of gold and silver sand.

In Europe, talc enters into the composition of the cosmetic, called *rouge*. The Romans prepared with it a beautiful blue, by combining it with the colouring fluid of particular kinds of testaceous animals. Talc is found in plenty in *Behar*, and other parts of India, also in *Persia*, and in *China;* in which last mentioned country ornaments are made of it, tinged with different colours. Most of the mica of commerce in Europe is brought from Siberia, where it is regularly mined: the chief mines are those on the banks of the rivers *Witten* and *Oldan*. By Brande's

analysis of talc, it consists of nearly equal parts of silica and magnesia, with not more than six per cent. of lime. Mica, the same distinguished chemist says, consists principally of alumina and silica, with a little magnesia and oxide of iron.

CCXXIV.

TALLOW. *Maat kólúpoo* (Tam.) *Húrrúk tail* (Cyng.) *Beyl ké chirbie* (Duk.) *Shahúm* (Arab.) *Peeh* (Pers.) *Chírbee* (Hind.) *Lemakchair* (Mal.) *Pássárum kowoo* (Tel.) *Gōvapā* गोवपा (Sans.) *Sevo* (It.) *Suif* (Fr.)

ADEPS JUVENCI.

Candles are seldom made of tallow in India; indeed, unless by Europeans, it seems to be little employed for any purpose, the bullock being a sacred animal. We are told by Sir Stamford Raffles, in his excellent History of Java, that the natives of that island procure a kind of vegetable tallow from the nut of the *kawan* (Malay), or *niātu* tree (Jav.). Of this Mr. Crawfurd also speaks, and tells us that the tree is tall and straight, having a smooth ash-coloured bark, and leaves resembling those of the *kánari;* the nut also resembles that of the *kánari,* but has not a hard shell; under its soft covering is a firm medullary matter, of a harsh, bitter, and unpleasant taste. This nut, by boiling, yields the tallow. Mr. Crawfurd (Hist. of Ind. Archip., vol. i. p. 456.) thinks, that in a more advanced state of the arts in Eastern

countries, this material, which is cheap and abundant, will become much prized; particularly in a country where there is a natural deficiency of animal fats, and oils. Mr. Crawfurd supposes the *kawan* tree to be a bassia; and we know, thanks to Dr. Roxburgh* and Mr. Gott, that the bassia butyracea (Roxb.) yield seeds, from which by expression and subsequent exposure to heat, a rich oily substance is procured; which the natives of some mountainous parts of the Circars use as a ghee or butter. The tree is the *fulwa* of the *Almora* hills (see article Tyre), and I think it more than probable that it is no other than the *kawan* of the Malays; and in the "Quarterly Journal of Science, Literature, and the Arts," for July, 1825, is an admirable paper by Dr. B. Babbington, jun., on a peculiar vegetable product, possessing the properties of tallow. It is obtained by boiling the fruit of the *peynie marum* (vateria† Indica, Lin.), when it comes to the top. It would appear by Dr. Babbington's analysis to be of a nature betwixt wax and oil: it is a concrete inflammable substance, and is used medicinally by the natives of the Malabar coast, as an external application for bruises and pains. The Doctor prepared most excellent candles with it, which burnt like those made of tallow. On cooling, this singular oil forms a solid cake, generally white, but sometimes yellow; it is greasy to the touch, with a degree of waxiness, and has rather an agreeable odour.

Dr. Abel, in his Journey into the Interior of China (p. 18.), found, that the *tallow-tree*, properly so called, is there quite common. It is a large beautiful tree

* See Asiatic Researches, vol. viii. p. 499. et seq.

† The same tree which yields the famous *peynie* varnish, to be noticed in Part III. of this work.

(croton sebiferum *), named by the Chinese *ya-ricou*†, from the circumstance of the crows being fond of the seed; it is from this seed that the vegetable tallow is made, by first boiling, and then pressing. Du Halde and Grosier have both mentioned this tree, the latter observes, that the oily matter, which has at first the consistence of common tallow, may, by boiling, be rendered as hard as bees' wax. See article Wax in this Chapter.

From the experiments of *Braconnot* and *Chevreul*‡ we learn, that the different kinds of animal oils or fats contain two substances, to which they have given the names of *stearine* and *elaine*, the first of which is solid, the last liquid, at common temperatures; the proportions of these in our present article is about 24 of elaine, and 76 of stearine.

CCXXV.

TAMARIND. *Poollie* ᒪᑭᐯᒥ (Tam.) *Umblie* امبلي (Arab. Hind. and Duk.) *Mahasi-ambala* (Cyng.) *Neghka* نڠكا (Mal.) *Tumiri hindee* تمرهندي (Pers.) *Assam Java* (Mal.) *Amlikā* अम्लिका (Sans.) *Umblee* (Hindooie). also *Tintilī* तिन्तिला (Sans.) *Tintiri* (Hind.) *Chinta punddo* (Tel.) *Kámāl* (Jav.) *Támálāki* (Band.) *Tamerins* (Fr.) *Tamarinden* (Ger.) *Tamarindo* (It.) *Cay-me* (Cochin-Chin.)

TAMARINDUS INDICA (Lin.)

* Or stillingia sebifera (Lin.).
† See Dr. Abel's Journey into the Interior of China, p. 177.
‡ See Annales de Chimie, tom. xciii. xciv.

Cl. and Ord. Monadelphia Triandria. Nat. Ord. Lomentaceæ.

The tamarind tree, the *balam pulli* of Rheede, and the *tetul* of Upper Hindoostan, is common in almost every part of India, and is, without doubt, one of the most beautiful and useful in the world. The natives, like us, consider the pulp of the fruit, which is certainly the safest of all vegetable acids, as cooling and laxative; and prepare with it a kind of sherbet, of which they drink freely in hot weather. The *Vytians* use the pulp as an ingredient in their laxative electuaries (laygiums); a decoction of the acid leaves of the tree they frequently employ externally, in cases requiring repellent fomentations; the leaves are, moreover, used for preparing collyria: internally, they are supposed, in conjunction with some other medicines, to possess virtues in what the Tamool doctors call *cámālay* (jaundice).

The natives of India are impressed with a notion, that it is dangerous to sleep under the tamarind tree, especially during the night; and it is a certain fact, that grass, or herbs of any kind, are seldom seen growing in such situations, and never with luxuriance; the consequence, it is to be presumed, of the acid damp from the tree. We are told by Rumphius, that the inhabitants of Amboyna* consider tamarinds as injurious in cases of weak digestion, or obstructions of the spleen, unless when in conjunction with aromatics.

The tamarind tree grows most luxuriantly in all the Eastern islands. The soil of Java† appears to bring the fruit to the greatest perfection; and the

* See Rumph. Amb. vol. ii. p. 93.

† Hence its Javanese name *assam-Java*, also Malay, which signifies Java acid.

tamarinds of the depending island of Madura, are reputed the best; they are of a dark colour, with a large proportion of pulp to the seed. Mr. Crawfurd tells us, that those exported from one part of the Archipelago to another, are merely dried in the sun; but those sent to Europe are cured with salt. In the Sunda the tree is called *chámpāhu*.

Dr. Thornton informs us, that he found the pulp of the tamarind of the highest use in sore throat, as a powerful cleanser; dose of the pulp from ʒss. to ʒi. Of the officinal preparation, the infus. tamarindi cum sennæ, the dose is from ʒij. to ʒiv. Tamarinds are an ingredient in the electuar. sennæ comp. It would seem, by Dr. Thomson's analysis, that ʒxvi. of the prepared pulp of the tamarind contained ʒiss. of *citric* acid, but only ʒij. of the *tartaric* acid, ʒss. of supertartrate of *potash*, and ʒss. of *malic* acid.

Of the tree, which will be mentioned in several other parts of this work, I shall simply state, that it is lofty and spreading, with *leaves* abruptly pinnate, and which are composed of sixteen or eighteen pairs of sessile *leaflets*, half an inch only in length, and very narrow, of a lively green, oblong, and obtuse; the *flowers* are of a straw-colour, and are in loose bunches of five or six coming out from the sides of the branches; the *pods* are seven or eight inches long, and contain five *seeds*, or more, which are shining, angular, and flat, and covered with a dark acid pulp. These seeds or stones, in times of scarcity, are eaten by the poor in India: they are first toasted, and then soaked for a few hours in water, when the dark skin comes easily off, leaving the seed below white and soft; they in taste somewhat resemble a common field bean, and are boiled or fried before they are eaten.

The tamarind tree is the *cay-me* of the Cochin-Chinese. It appears, by Loureiro's account, to be only cultivated in gardens in Cochin-China. Vide Flor. Cochin-Chin. vol. ii. p. 403. The natives of many parts of Africa employ the fruit of the adonsonia digitata for the same purposes that tamarinds are used in India.

CCXXVI.

TAPIOCA.

JATROPHA MANIHOT (Lin.)

Cl. and Ord. Monœcia Monadelphia.

Having found that the jatropha manihot grew in great abundance and luxuriance in many parts of Lower India, I, some months before leaving that country, in 1814, attempted to make tapioca from the root, and perfectly succeeded; the first, I believe, that ever was made in our Indian dominions. An account of the method of preparing it was published in the Madras Courier, under date 13th of March, 1813. An amylum, or starch, is first to be obtained from the fresh root, which starch, to form it into tapioca, must be sprinkled with a little water, and then boiled in steam; it is in this way converted into viscid irregular masses, which are to be dried in the sun till they have become quite hard, and then may be broken into small grains for use. Tapioca is an admirable diet for the sick, being at once light, extremely pleasant to the taste, and nourishing; it may be either simply boiled in water, like sago, and sweetened with sugar, or it may be boiled in milk.

The tapioca plant is called in Tamool *mārávullie*, and, from the circumstance of its having no Sanscrit,

Arabic, or Persian name, I am led to think, that it is not a native of Hindoostan, but was probably brought hither, many years ago, by the Portuguese; it would seem to be the variety called in the West Indies *sweet cassada.* Browne says of it, in his History of Jamaica (p. 350.): "Foliis palmatis, lobis incertis, radice oblonga funiculo valido per centrum ducto carne nivea." The root of this sort is considered as the most safe to eat, indeed, it may be taken raw, or roasted like a potatoe, without the least danger; it is called by the Tamools *mărăvŭllie-kalung*, and is much prized by them. The jatropha manihot, I find, grows also in Ceylon; and the late Dr. White, of the Bombay establishment, informed me, that dried, it is exported as an article of trade from the Mosambique to the ports of Goa, and Damaun: to Ceylon, it was first brought from the Isle of France, in 1786 or 1787, by Governor Van de Graaf.* Southey, in his "History of Brazil," tells us, that with the root of the mandioc, as he calls it, is prepared by fermentation an intoxicating liquor (pp. 232, 233, 234.). The excellent Baron de Humboldt says, that in New Spain a sauce and soy are made from the bitter cassava, *juca amarga*, the juice rendered innocent by boiling. The jatropha manihot is the *juca* of the Mexicans, in whose country it has been cultivated from the most remote antiquity; they distinguish the two kinds carefully, and separate them in their fields, calling the bitter *juca amarga*, and the other *juca dolce:* the first kind they render innocent by means of fire. *Browne* observes, in his History of Jamaica, that the variety of the plant which yields the bitter root, has "foliis palmatis

* See Asiatic Annual Register, for 1805, vol. vii. p. 87.

pendadactylibus, radice conico oblonga, carne sublacteæ" (p. 849.). It is said to contain the deadly poison termed *manipuera*, which is the fresh juice of it, and is, therefore, always carefully squeezed out, after which the root is as safe to eat as that of the other variety. Before concluding all I have to say regarding this valuable article, I must observe, that the flour or meal of the sweet cassava root makes good biscuit and bread; to prepare which the root is to be first well soaked in fresh water, and subsequently dried in the sun, and then pounded into flour for use. Bread so made, Baron de Humboldt observes, is considered by the inhabitants of New Spain as particularly nutritious.*

Four species of jatropha were growing in the botanical garden of Calcutta in 1814: *manihot*, *multifida*, *curcas*, and *grandiflora*. Three species grow on Ceylon, where our article is called *mangyokka* (Cyng.).

CCXXVII.

TAR. See article Turpentine.

CCXXVIII.

TEA. *Théah*, also *Théh* (Chin.) *Tsjā* (Japan.) *Cha* چا (Arab. Pers. and Duk.)

THEA VIRIDIS (Lin.)

On no subject has there been more written than on that of tea; and yet strange, however, as it may

* See Baron de Humboldt's Political Essay on New Spain, vol. ii. p. 435. English trans.

be to say, there are still many doubts respecting the tree or trees which yield the black and green teas. One of the latest scientific travellers into that country, Dr. Abel, expresses in one part of his work an uncertainty, whether there is more than one variety of the tea plant, from which both teas are prepared; but soon after adds, that he is more inclined to believe, that there are two; and that from all he could learn, either of these would yield both the black and green teas, according to the mode of preparation adopted. In some provinces*, such as that of *Keangnan*†, most attention is paid to the cultivation of green tea; while in others, such as *Fokien*‡, the natives attend more to the black. "*I think there is little doubt* but that the principal difference betwixt the black and green tea is the age of the leaf; the latter being prepared from it when in its less mature state, and while it contains a quantity of viscid, and to a certain degree narcotic § juice, which gives the peculiar character to the hyson teas.‖" Something is also to be ascribed to the manner of drying¶; as Dr. Abel justly remarks, leaves slowly dried will naturally retain more of the green colour, than those that are dried rapidly. The same gentleman informs us, that the strongest tea he saw in China barely coloured

* The green tea district in the province of *Keangnan* is embraced betwixt the 29th and 31st degrees of Northern latitude; the black tea district in the province of Fokien is contained within the 27th and 28th degrees of Northern latitude.

† Particularly to the West of the city of *Wechufu*.

‡ Especially in the vallies of *Bu-ye*.

§ See Sir George Staunton's valuable account of an Embassy to China, vol. ii. quarto edition.

‖ See Dalrymple's Indian Repertory, vol. ii. p. 285., in which he gives this as the opinion of *Chow-qua*, who had been eight times into the Bohea country.

¶ The green tea is carefully dried by exposure to the open air in the shade; the black by means of artificial heat, in shallow pans over a charcoal fire.

the water; and on examining the leaves after infusion, he perceived that they were those of the scarcely expanded buds.* Mr. Philips, in his Treatise on Cultivated Vegetables, has brought forward much curious and interesting information on tea; and to that work (vol. ii. p. 285.) I refer my reader. The green teas commonly met with in India are the *gun-powder*, which is very strong, and is the leaf rolled quite round; the *hyson* †, an admirable tea; it is a small leaf, closely curled, and of a blueish green. Of the *bloom* ‡ tea, and *Singlo* teas, (also green teas), I can say little from my own experience; the first is of a light green colour, and has a loose leaf: the other is named after the place where it is cultivated.

Of the black or bohea teas, five or six different sorts have been mentioned by different writers; I shall only notice three. First, the *pauchong*, as it is called in India and in Europe, and which is, I believe, what is also sometimes named *padré sutchong*; it is peculiarly delicate in flavour, and is frequently brought from China carefully packed up in papers, each containing about a pound. I have rarely met with it in Europe; but hesitate not to say, that it is the best and most delicious of all teas. Second, the common *sutchong*, too well known to require any description; it is that black-tea which is most drank in England, selling commonly at from eight to ten shillings or more per pound. Lastly the common black or bohea tea, which the Chinese call *wooe-cha*; and the best of which they term *tao-kyonn*: this they prize much for their own domestic use.

* See Abel's Journey into the Interior of Africa, pp. 222 and 223.

† Hyson tea, generally speaking, the Chinese call *he-chun-cha*, they export it.

‡ The bloom tint is given by means of the fumes of indigo while burning.

Tea is a produce of Japan*, Tonquin, of the island of Formosa, whence it is exported as a medicine, and of Cochin-China, as well as of China; but that of the last-mentioned country alone is fit for exportation. As an article of diet, the Japanese cultivate it in a very careless manner. The teas of Tonquin and Cochin-China are still coarser. Green tea, it would seem, is chiefly prepared for sending out of the country; the Chinese themselves, and the inhabitants of the Indian islands, consume only the black.† Tea was first used in England during the Commonwealth, and now not less than 22,000,000 pounds are consumed annually in this country. In the rest of Europe besides, it is supposed, that more than 5,000,000 pounds are annually sold, and about as much in America.

Volumes have been written for and against tea; while some authors, namely, Mr. Hanway, Mr. Adair, in his Essay on Diet and Regimen, &c., have ascribed to it many pernicious qualities, such as having the effect of inducing nervous tremours, weak digestion, low spirits, typhus fever, and dropsy: others, again, such as Dr. Aiken, Huet, Bishop of Avranches‡, Raynal, Bontequoe, and others, have been as lavish in its praises. But none more than Dr. Clarke in his Travels (vol. ii. p. 533.), who says, "the exhausted traveller, reduced by continual fever,

* Kœmpher, in his Amœnit. Exotic (fasc. iii. p. 625.), says of tea, "optimus est qui unius anni ætatem habet;" as a drink for the healthy, he praises it highly, but adds, "omnis theæ potus supprimit medicamentorum efficaceam; in colica nocet, et maxime vitanda est."

† See Crawfurd's History of the Indian Archipelago, vol. iii. p. 522. See same work, vol. i. p. 325.

‡ He wrote a Latin poem on it, in which he says, it deserves the name of brusher to the understanding, for the good effects it has on the brain.

and worn by incessant toil, experiences in this infusion the most cooling and balsamic virtues; the heat of his blood abates, his spirits revive, his parched skin relaxes, and his strength is renovated." In this eulogium I most cordially join from my own personal experience; that the use of tea may be abused like any thing else, no one will dispute; and that green tea drank in any considerable quantity, brings on watchfulness, and nervous agitation, I am ready to allow; but I must at the same time maintain, that the better kinds of black teas, so far from being prejudicial, have positive virtues in cheering the spirits, strengthening and comforting the stomach; and giving after great fatigue, a new life and tone to the whole frame. To the sedentary and literary, tea is certainly a great blessing; as it enlivens without heating, nay, I should almost be inclined to go a little further, and partly ascribe to its prudent use, somewhat of that brilliancy of imagination and fineness of fancy, which so peculiarly distinguish the poets* and novel writers of our happy country! where so much is drank.

Of late years there has been much counterfeit tea exposed for sale; a crime which can scarcely be too severely punished. Mr. Phillips observes, "that the counterfeit black tea produces a deeper colour by infusion than the real tea, and that a little copperas put into it, will turn it to a light blue, which otherwise ought to be of a deep blue inclining to black.

* This notion may, by some, be reckoned a little fanciful; I shall, therefore, bring in support of it the opinion of an enlightened and valuable writer, belonging to France, a country where tea has not been supposed to be much prized. Chevalier Roques says, in speaking of Bohea tea, "pris avec moderation, il reveille l'esprit, lui donne un agitation douce, et plus d'un ecrivain lui a du un trait piquant, une pensée heureuse." See Roques Phytographie Medicale, vol. ii. p. 203.

If green tea be adulterated, put a bit of gall into the liquor, which will turn it to a deep-blueish colour; this it will not do, unless there be either vitriol or copperas in it, as galls do not tincture the proper tea."

Willdenow, following the notion that had been adopted by Linnæus, makes the black and green tea two distinct species; describing the first as having six-petalled flowers, and the last nine. But Dr. Lettsom, in his excellent History of the Tea Tree, assures us, after an examination of many hundred flowers, both from the Bohea and green tea countries, that their botanical characters always appeared to him uniform. The tree, or rather shrub, seldom rising higher than six or seven feet; having leaves alternate, elliptical, bluntly serrate, except near the base; with a white corolla, varying in the number and size of the petals. Loureiro gives a somewhat different account, making the leaves to be lanceolate and acutely serrate. This author concludes by observing, that, upon the whole, he believes that of the common and proper tea there is but one species, the apparent differences proceeding from soil, culture, and preparation: he, however, gives us two other species of thea, viz. *thea Cochin-Chinensis**, having a five-petalled corolla, and which is used in that country as a sudorific; and the *thea Oleosa*†, a native of China, from the seed of which an oil is obtained fit both for the table and burning, and the fruit of which is rather a berry than a capsule; this last is now ranked under the genus camellia, and is denominated the *camellia oleifera*. The leaves of another species of this genus, the c.

* The *chean-nam* (Cochin-Chinese).

† The *che-deau* (Chinese). Vide Flora Cochin-Chin. vol. i. p. 338.

sasanqua, and which the Chinese call by the name of *cha wha* *, bear so close a resemblance to those of the real tea plant, both in appearance and natural qualities, that the Chinese mix them together with a lavish hand: they have a sweet smell. It is said to be with the small, white, pleasant-scented flowers of the olea fragrans (quai-fa), that the Chinese give a peculiar flavour to their best teas; the plant is a native of Japan, China, and Cochin-China. Numerous are the leaves which have at different times been used as substitutes for tea. In New Holland those of the *corræa alba* are employed, in the Kurele islands those of the *pedicularis lanata*, in New Jersey those of the *ceanothus Americanus* are resorted to. Mr. Gray says, that the leaves of the rosa eglanteria are sometimes prepared for the same purpose. Southey, in his History of Brazil, mentions the *matté* or *herb of Paraguay*, as being as universally used for tea in that part of South America as the real tea is in England, and taken with milk and sugar. The *herb Paraguay*, is obtained from a tree which the *Guaranies* call *caa*; the foliage of which resembles that of the orange tree, and has white flowers disposed in small cymes, in the axiles of the leaves. The tree would appear to have a very extensive range, being found both in Paraguay and Brazil. The reader may find some account of it in the "Histoire des Plantes les plus Rémarkables du Brasil et du Paraguay," (tom. i. p. 41. of the Introduction,) par M. Auguste de St. Hilaire; we are there informed, that the tree is called by the Spanish Americans *l'arvore de mate ou da congonha*; and that there is a great difference betwixt that which grows in Paraguay and Brazil.

* See Sir George Staunton's Embassy to China, vol. ii. p. 467.

The gentleman just mentioned, seems inclined to name it *ilex mate;* but Doctors Spix and Martius, in their Travels, notice it under that of *ilex congonha.* It is described and figured under the scientific appellation of *ilex Paraguensis,* in an Appendix to the second volume of Mr. Lambert's work on the Genus Pinus; and I have been informed, that that distinguished botanist has actually the plant growing in his garden, at Boyton House in Wilts. Other leaves *, which have been used as tea, are those of the *psoralea glandulosa* in Mexico and Guatimala; those of the *symplocos alstonia* of Humboldt and Bonpland, in New Grenada, which is said to yield a tea little inferior in virtues to the China article; and still farther North, very wholesome teas are said to be prepared with the leaves of the *gaultheria procumbens* and *ledum latifolium;* which last plant, however, we are told by Krocker, according to Miller, has an inebriating quality, and is used by the Dutch in tanning leather. I perceive by the "*Voyage en Tourcomanie et à Khiva*" of M. Mouravier (p. 375.), that tea is a favorite drink of the Khiviens; and by notes at the end of the work by Klaproth, it appears that that which they prize, is called by the French *thé en briques;* the Russians term it *kirpitchnoi,* and the Chinese *tchowan.* It is common amongst the *Mongols* and *Bouriates,* and is prepared, he says, "dans la Chine septentrionale, des feuilles d'un arbuste sauvage, qui résemblent à celles du mérisier." He adds, that poor people who cannot get

* In the Flora Peruviana and Chilensis, tom. ii., I find a plant mentioned under the name of *xuarezia biflora,* Icon. cxxiii., and called in Spanish *the del Peru;* which was, some forty or fifty years ago, so much in repute, that the China tea was at that time little sought after in Peru.

it, supply its place, with the leaves of the following plants.

	Mongols
Saxifraga crassifolia - -	*Badan*,
Tamarix Germanica - -	*Balgou*,
Potentilla rupestris - -	*Khaltalsa*,
Glicyrrhiza hirsuta - -	*Nakhalsa*,
Polypodium fragrans - -	*Serlik*,

and also occasionally with the leaves of a species of *sanguisorba*, called in Mongols *chudou*.

It appears that the French are likely to succeed in cultivating a new sort of tea (zenopoma thea sinensis) in the South of France, which is scarcely known to us; it was brought into France about four years ago, by a Russian, and having been examined by the academicians of Paris, was reported to have qualities sudorific and stomachic. (See Phillip on Cultivated Vegetables, vol. i. p. 296.)

By Dr. Lettsom's experiments on tea, it appears, that the infusion is antiseptic and astringent; and it is no doubt, by that happy combination, added to its known efficacy in enlivening the spirits, that it is at once gently tonic, soothing, and refreshing! From experiments made on teas, black and green, and which may be seen in the Journal of Science (for January, Number xxiv. p. 201.), it appears that from one hundred parts of good black tea, there was lost on infusing, by weight, thirty-five per cent.; the infusion thus obtained, on being evaporated, yielded a dark brown transparent extract. The leaves on being again dried and infused in alcohol, lost twelve per cent.; the extract thus obtained was of a more resinous nature and agreeable smell. So that in all, of soluble matter, forty-seven parts were procured from one hun-

dred. By similar experiments made with green tea, fifty-one parts of soluble matter were procured from one hundred. In the last experiment, the extract obtained from evaporating the alcohol infusion, was a highly fragrant, olive-coloured, resinous substance, scarcely acted on by cold water.

With regard to situations not in China or Japan, where tea might be cultivated with a chance of success, the reader is referred to an excellent paper, by Mr. W. Huttman, in the Asiatic Journal for December, 1822. It may be further remarked, that some of the most likely are, the *Cape of Good Hope*, as suggested by Charpentier Cossigny (see Barrow's South. Africa, p. 18.), and confirmed by Dr. Abel, in his Journey into the Interior of China (p. 224.); *St. Helena*, where the plant grows in great vigour in the governor's garden; amongst the *Srinagar mountains*; in Ceylon *; in some parts of the *Travancore country*; and we know that *Senhor Gomez* has contrived, with the assistance of a few Chinese gardeners, to cultivate the tea plant at *Rio Janeiro* in *Brazil*. The excellent Dr. Wallich has expressed a belief, that both the tea shrub and the Nepaul camellia (kissi), will, before long, be introduced into such parts of Northern Hindoostan as may appear best calculated for their cultivation. The camellia was discovered by Mr. Gardener on the mountains of *Sheopore* and *Chandragheree*, having leaves of peculiar fragrance.

Such Europeans in India, as find that the common tea does not agree with them, have a most pleasant and delightful substitute in the leaves of the andro-

* Where, we are told by Mr. Moon, in his Catalogue of Ceylon Plants, the thea Bohea is called by the Cyngalese *rata-tekola*.

pogon schoenanthus, or lemon grass; also in the dried leaves of the ocimum album (Lin.), which is *cunjam koray* (Tam.), *suffāid toolsie* (Duk.), *kooka tolasie* (Tel.), *bādrooj abeez* بادروج ابيز (Arab.), but is commonly known on the Coromandel coast by the name of toolsie tea.

Dr. A. T. Thomson, the correctness of whose judgment and admirable discrimination on every subject connected with medical science, the British public have justly appreciated, seems disposed to make the thea viridis and thea Bohea distinct species; and has been so kind as to transmit to me the following descriptions:

Thea Bohea, "leaves alternate, on very short petioles, elliptico-oblong; in length about two inches, in breadth three-fourths of an inch; apex slightly acuminate; disk equal on both sides of the mid-rib: upper surface olivaceous green, shining, obscurely granulated; under, pale: margin obsoletely serrated."

Thea viridis, "leaves alternate, on very short petioles, oblong, in length about three inches, in breadth scarcely one inch, pointed at the apex, and tapering towards the base; the disk unequal, the right half (looking at the under surface of the leaf,) being narrower than the left, and more tapering towards the base; upper surface smooth, shining, of an emerald-green colour; the under, veined, the mid-rib very prominent, pale; margin denticulated."

CCXXIX.

TEAL, GREY. *Killoovey* (Tam.) *Moorgabie* مرغابي (Pers. and Duk.) *Sheravie goova* (Tel.) *Sarcelle* (Fr.) بلبيك *Bilibik* (Mal.) *Farchetola* (It.) *Fulsi* (Beng.) *Farchetola* (It.)

ANAS CRECCA (Var.)

The grey teal is very common in India, and is there perhaps the most delicate of all the Anas family, being less apt to have a strong and fishy taste. The natives have many ingenious modes of catching teal, and can imitate their call in a very surprizing manner. Of the Anas crecca, there are several varieties to be met with. What is usually called the *red* or *whistling teal*, is not near so much prized; while on the wing it makes a peculiar kind of piping noise. It is the *sheng-kiloovay* of the Tamools. Widgeons, of various plumage, are also common in Lower India; that most frequently seen, appears to be a variety of the *anas Penelope* (Lin.), and is called by the Tamools *singhetikan*.

General Hardwicke, who has done much for the Natural History of India *, noticed and painted no less than nineteen different species of anas; and has now the drawings in his possession. I perceive the ruddy goose amongst his anas; it is the anas casarea of Latham, and the *chucua* of the Bengalese. The anas Indica is the *hans* of the Musselmans, and the anas hina is the *toolsee* of the Bengalese.

* In a manuscript volume at the India House there is fully described no fewer than twenty species of anas.

CCXXX.

THORN APPLE, PURPLE. *Karoo oomatay* கருஊமத்தை (Tam.) *Kālā dahtoora* كالا دهتورا (Duk.) *Dhétoora* (Hind.) *Jowz māssél** جوز ماثل (Arab.) *Goozgiah* ڭوزڭياه (Pers.) also *Bŭnjdeshtee* بنج دشتي (Pers.) *Rotecubung*, also *Kechubung* (Mal.) *Hummatoo* (Hort. Mal.) *Nulla oomatie* (Tel.) *Kāla dhatoora* (Hindooie and Beng.) *Kaloo attana*, also *antenna* (Cyng.) *Dutro* (Port.) *Krishna dhattūra* कृष्ण धत्तूर (Sans.) *Umāna* (Malealie). *Kechu-booh* كچو بوع (Egypt. Arab.)

DATURA FASTUOSA (Willd.)

Cl. and Ord. Pentandria Monogynia. Nat. Ord. Luridæ.

This species of datura (both the double and single), as well as the datura metel, grows wild in many parts of India, generally on waste lands. The d. stramonium, I am inclined to believe, with Dr. Fleming, is not to be found in Hindoostan; it is the species which has a place in the London Dispensatory, and is the stramonium maniacum (Col. Phytob. 47.). The datura fastuosa is the datura rubra of Rhumphius, and the solanum foetidum of Bauchin; and is distinguished from the d. metel by having dark-coloured flowers, while those of the metel are white:

This is more properly, according to Avicenna (156.), the Arabic name of the dat. metel.

a more substantial difference is, that the d. fastuosa has "pericarps tubercled, nodding, globular, leaves ovate, angular;" while the metel has "pericarps thorny, nodding, globular, and leaves cordate, almost entire, pubescent." The datura metel, we are informed by Forskahl, in his "Flora Arabiæ Felicis," has no less than three names in Arabia, بنج, منج, and منك. Rhumphius calls it *datura alba*, and Rheede *hummatu;* it is the *vullay oomatie* of the Tamools, and the *ca-duoc* of the Cochin-Chinese.* The *kāroo oomatie* (d. fast.), which is the most common species in India, grows to the height of about four or five feet; "the flowers long and narrowish, bell-shaped, and straw-coloured; the leaves long, dark, and of an irregular angular shape." The d. metel seldom reaches beyond a foot and a half in height; "flower bell-shaped, and long; leaf about six inches in length, and pointed." The smell of both plants is peculiarly fetid, and both have a somewhat bitterish and nauseous taste. The datura stramonium is not† a native of India, but it grows in the botanical garden of Calcutta, introduced there from America by W. Hamilton, Esq. Thunberg found it in Japan‡, and we learn from the same author, that it is a native of Java.§ It is the Στρυχνος γανικος of Dioscorides, and was, therefore, received into our Materia Me-

* Vide Flor. Cochin-Chin. vol. i. p. 110.

† Since writing the above I perceive, that a variety of the datura stramonium, var. *canescens* (Wallich), is quite common in Nepaul and the Northern tracts of Hindoostan, known by the name of *parbutteeya;* the whole plant pubescent, glaucous, pale; flower always single, and of a yellowish white colour. See Flora Indica, vol. ii. p. 240., observation by Dr. N. Wallich.

‡ Flor. Japon. p. 91.

§ See his Travels (vol. iv. p. 147.). See also a paper on the poison tree of Java, by Dr. Horsfield, in the seventh volume of the Transactions of the Batavian Society.

dica. The intoxicating and narcotic qualities of the daturas seem to be well known in Eastern countries, and are particularly mentioned by Colonel Hardwicke in his Journey to Sirinagur. Captain Turner saw the thorn apple at Bootan, where he was told that it was considered as a medicine.

I was at much pains to inquire amongst the *Vytians* of Southern India, whether the root, dried capsule and seeds of either of the daturas, I have mentioned as Indian products, were ever recommended by them to be smoked in cases of spasmodic asthma, in the manner administered with success on Ceylon, and in the more Northern* tracts of Hindoostan; but they appeared to be totally unacquainted with their virtues in this disease, indeed, they would seem to prescribe the *oomaties* very cautiously on any occasion. In those violent and deep-seated head-aches which often precede epilepsy and mania, the Mahometan doctors sometimes order the root of the datura fastuosa, in powder, in very small doses, not exceeding from a quarter of a grain to three grains. Dr. Barton, of America, I find also prescribed the thorn apple with great success in similar cases; he gave the leaves in powder, beginning with a quarter of a grain, and gradually increasing the dose to fifteen or twenty. In large doses the datura produces vertigo, and has the effect of dilating, in a singular manner, the pupil of the eye. Bergius and Stoerck ordered the inspissated juice of the leaves of

* I am informed by my friend Dr. Sherwood, who was long stationed at Chittore, that the native doctors there, and in the neighbourhood, are in the habit of employing the *karu oomatie* (datura fastuosa) in asthma; all parts of the plant, except the leaves, being cut into small pieces and dried, and smoked night and morning for three days together; the *vulley oomatie* is not used for this purpose.

the datura stramonium in epilepsy. And with regard to the opinion entertained by the *Vytians* of the use of the datura fastuósa in mania, it is, in all probability, on the same principle as that which causes it to be prescribed, according to Rhumphius (Amb. tom. v. p. 244.), for producing sleep: his words are, "Radicis drachma in vino adsumpta profundum adfert somnum." And Rheede has these words in speaking of the same medicine: "Semina largius sumpta, saporem inducant ac periculosa est eorum sumptio necem adferens." (Hort. Mal. part ii. p. 50.)

The Mahometan practitioners in India (borrowing, in all probability, from *Moomina*, in his *Mufurdatie Mūmna* مومنا مفردات, where the d. fast. is fully treated of under the name of دشتي بنج), order it in epileptic cases. The Hindoo doctors employ the succulent leaves and fruit of the plant in preparing (in conjunction with warm cow-dung) a poultice, used for repelling* certain tumours, called *kundamallie* (scrophulous) and *moolie poottoo* (cancer), and also for relieving the pain which accompanies the piles; they likewise suppose, that the seeds made into pills or lozenges, and laid upon a decayed tooth, deaden the pain of the tooth-ache; a fact I was pleased to perceive noticed in the second volume, p. 361., of Lockman's Travels of the Jesuits. Dr. Horsfield, in his Account of Java Medicinal Plants, places datura ferox, *kootshoobung* (Jav.), and datura fastuosa, *kkassian* (Jav.), amongst the Narcotic Stimulants of the Javanese; the last, he tells us, they consider as an-

* On the continent of Europe the fresh leaves have been applied to the mammæ, for the purpose of checking the secretion of milk. See *Fränk. Anmerkungen*, i. p. 424.

thelmintic, and use externally in herpetic diseases. The first, *kootshoobung* (dat. ferox), Mr. Crawfurd* informs us, is given by the Malays to produce the most complete stupor; and is a powerful engine in the hands of the Chinese for effecting various artifices and tricks in trade. Orphila† places the daturas, stramonium‡, metel, and ferox, amongst his Poisons; the seeds of the last of which, according to Gmelen, produce delirium. The Arabians rank the thorn apple amongst their *Mokederrat* مخدرات § (Narcotics). The d. stram., according to Wedenberg, contains gum and resin, a volatile matter (which Dr. Thomson found to be carbonate of ammonia), and a narcotic principle, ascertained by Mr. Brandes to be an alkaline salt.

Roques notices the datura fastuosa in Phytographie Medicale, vol. i. p. 228.; it is classed, he observes, amongst the Poisons, and has got, by some writers, the familiar name of trompette du jugement. Four species of datura grow in Ceylon.

* See his History of the Indian Archipelago, vol. i. p. 466.

† See Traité des Poisons, vol. ii. part i. p. 244.

‡ Roques gives several frightful accounts of the effects of the seeds of stramonium, when taken internally, in producing mania, &c. Hufeland recommends a tincture prepared with the seeds, twenty drops of which produced a better effect in spasmodic affections than opium. In France the datura stramonium is vulgarly termed "herbe aux sorciers." "On a obtenu, des semences un alcali vegetal composé nommé daturin." See Phytographie Medicale.

§ See Materia Medica, by Noureddeen Mohammed Abdullah Shirazy.

CCXXXI.

TOBACCO. *Poghéi elley* புகையிலை (Tam.) *Tumbākū* تنباکو (Hind. and Duk.) *Bujjerbhang* بجربهانگ (Arab.) *Tabaco* (Japan.) *Doonkola* (Cyng.) *Poghāko* (Tel.) *Dhūmrapatra* धूम्रपत्र (Sans.) *Tambrācoo* (Mal.) *Tambroco* (Jav. also Bali.) *Tabac* (Fr.) *Taback* (Ger.) *Tabacco* (It.) *Tamer* (Tart.) *Quauryetl* (Mexican). *Youly* (Caraub.) *Sang-yen* (Chin.)

NICOTIANA TABACCUM (Lin.)

Cl. and Ord. Pentandria Monogynia. Nat. Ord. Luridæ.

The tobacco plant is now cultivated in almost every part of India, Lower as well as Upper. By a proclamation of Jahangir, and mentioned in his own Memoirs, it would appear, that it was introduced into India either in his, or the preceding reign; and the truth of this, the author of the "Remarks on the Husbandry* of Bengal" justly observes, is not impeached by the circumstance of the Hindoos having names for the plant evidently corrupted from European denominations of it. We are informed by B. Humboldt, in his Personal Narrative, "that this plant was first discovered in the Mexican provinces of Yucatan, in 1520, and that it was there called *petum;* it was afterwards transported to the West Indies and North America, and brought to Europe

* See work, p. 121.

by Hernandes de Toledo, who came from Florida to Portugal, in the beginning of the sixteenth century. The seeds were sent from Portugal to Catherine de Medicis by Jean Nicot, an agent of Francis II., after whom it received its generic name Nicotiana; the specific appellation being taken from tabac*, the name of an instrument used by the natives of America in the preparation of the herb:" by the way, it is a singular enough fact, that the Corean word for tobacco, Captain Hall† found the same as ours, or nearly so. As far as I have been able to learn, tobacco was first brought to India from Brazil, about the year 1617; some time later than it was cultivated in England, which was, according to Label, in 1570.

There are various species of the plant, and great differences in the qualities, according to the soil and climate. The finest kinds in India, and perhaps in the world, grow near the village of *Woodānum*, in the Northern Circars, and in some of those low sandy islands formed at the mouth of the river *Krishna* (from which is made the famous *Masulipatam snuff*); also in the Delta of the Godavery, where the soil is peculiarly rich and fertile.

Tobacco is universally cultivated in the Eastern islands; but in *Mindano*, *Luconia*, and *Java* alone, in such quantities as to admit of its being exported. In the last mentioned island, in the rich valleys of *Kadu* and *Ladok*, it is of a superior quality! It is a common produce of Siam.

* Another account is, that the specific name is taken from the word *Tobasco*, a province of Yucatan, where it was first discovered by the Spaniards, and brought to England by Sir Walter Raleigh, about the year 1585.

† See Captain Basil Hall's very interesting Voyage to Corea and the Island of Loo-choo, last edition, p. 76.

The leaves of this plant taken internally prove emetic, cathartic, and narcotic; their properties as an errhine and sternutatory are well known; distilled in a retort, without addition, they yield an acrid empyreumatic* oil, found, from repeated trials, to be poisonous to sundry animals: see Barrow's Travels in Africa (p. 268.), where may be found an account of a snake killed instantaneously by a little of it having been put into its mouth. Newman analysed three different sorts of tobacco, the *American canister*, the *Dutch leaf*, and *dried leaves of our own growth*; an ounce of the first gave four drachms, thirty-five grains of extract; the same quantity of the Dutch, four drachms; of our own, four drachms and fifty grains. Dr. Fowler tells us, that an infusion made with the leaves in water, in the proportion of an ounce of the former to a pint of the latter, is useful in cases of dropsy and dysuria, in doses of sixty, seventy, or eighty drops to adults, twice daily; as a hydragogue, tobacco is, however, not equal to either squills or digitalis, but it is allowed by Dr. Pearson to be a valuable medicine in dysuria, in which disease its antispasmodic virtues are of advantage.

The native practitioners use tobacco to excite vomiting; and in cases of obstinate constipation, they apply the leaves warmed to the orifice of the anus with never-failing success, but sometimes at the expence of vomiting. They are also ordered by them for the purpose of fumigating such persons

* Roques informs us, that a single drop of this oil put on the tongue of a dog, or injected with a little water into its rectum, kills it in a few minutes; nay, sometimes, it has been found, that a single full pinch of strong snuff has produced apoplexy, adding, "c'est avec raison qu'on a rangé le tabac dans la classe des Poisons narcotiques acres." For Vauquelin's analysis of the leaves, see Phytographie Medicale, vol. i.

as have suffered much from venereal complaints of long standing, and protracted courses of mercury. European practitioners in India occasionally prepare with tobacco certain unguents for destroying cutaneous insects, and for cleansing foul ulcers. Injections of the smoke by the anus I have known resorted to with success, in cases of obstinate constipation. In an interesting work lately published, entitled *Colombia* (pp. 608, 609.), the author, in treating of tobacco, observes, that the *Otomacs* produce a peculiar kind of intoxication by means of a powder made from the long pods of the *acacia niopo*, which they call the *niopo*, or *cúrúpa tobacco*; this abominable powder, he adds, intoxicates by the nostrils.

In speaking of the tobacco of Eastern countries, I ought sooner to have mentioned, perhaps, that of *Darabjerd**, in the province of *Fars*, in Persia, which is sent all over the East, so much is it esteemed; but Niebhur seems to be of opinion, that that of Manilla† is the finest in the world.

Seven species of Nicotiana were growing in the botanical garden of Calcutta in 1814, all originally introduced from America.

Dr. Paris informs us, that the great superiority of the Macuba snuff is owing to the fermentation it undergoes, by being mixed with the best cane juice (Pharmacologia, p. 537.).

* See M. Kinneir's Geographical Memoir of Persia, p. 76.
† See Niebhur's Travels.

CCXXXII.

TODDY. *Khúlloo* கள்ளு (Tam.) *Khúlloo* (Tel.) *Sūrā* सुरा *Tari* or *Tādi* ताडि (Sans.) سيندي *Saindee* (Duk.)

Toddy is the general name given by the English to those sweet, delicious, and refreshing liquors, which are procured in India by wounding the *spatha* of certain palms, when it exudes, dropping into earthen pots which are attached to the superior part of the stem of the tree for receiving them. The best of all these is that obtained from the cocoa-nut tree (cocos nucifera*), and which is called in Tamool *tennang khulloo*, in Dukhanie *narillie* ناريلي, in Arabic *nargilie* نارجيلي, and in Tellinghoo *tenkāia khulloo*.

Taken fresh from the tree, early in the morning before the sun is up, it is certainly a luscious and most pleasant drink, cooling, refreshing, and nourishing; it is, besides, employed for making the best kind of Indian arrack, and yields a great deal of sugar, called in Tamool *ténné véllum*, in Dukhanie *naril ka ghore* ناريل کا کور, and in Tellinghoo *ténkāia bellum*. Europeans, especially delicate females, in India, who are apt to suffer much from constipation, find a cupfull of this toddy, drank every morning at five o'clock, one of the simplest and best remedies they can employ. The *Vytians* prescribe it in consumptive cases. When the heat of the day has

* *Cay-dua* (Cochin-Chin.), vide Flor. Cochin-Chin., vol. ii. pp. 566, 567., where the many properties of this plant are fully stated.

commenced, however, it is not so safe, as it then undergoes a degree of fermentation, and is apt to intoxicate and occasionally bring on cholera and bowel complaints. The different toddies to be met with in India are: 1st. The cocoa-nut toddy just mentioned. 2d. The *Palmyra toddy* (or toddy of the borassus flabelliformis*); it is also sweet and pleasant tasted, but inferior to that of the cocoa-nut; it is *pannang khulloo* (Tam.), *tarie* ताड़ी (Duk.), and *tātie khúlloo* (Tel.); from it too sugar and arrack are made. 3d. The *koondel panéi*† *toddy* (or toddy of the caryota urens); it is not equal to either of the other two, and is chiefly used on the Malabar coast, where this palm is termed *erimpana*; sugar is also prepared from this palm. In the Eastern islands the tree is called *nibung*, and is the true mountain cabbage tree; the top of it (the germ of the future foliage) is, like that of all or most of the palms, edible, but much more delicate than the others; some of the coarser parts of this top taste like a tender cabbage-stock, while others are so delicate as more to resemble a filbert.‡ *Nibung* is, properly, the Malay name; it is *andudu* in Bali, *palun* at Amboyna, and *ramisa* at Macassar. 4th. *Toddy of the wild date tree* (or elate silvestris), called in Tamool *eetchúm khúlloo*, in Dukhanie *sayndie* سیندی, in Tellinghoo *einta khúlloo*, and in Sanscrit *kharjūra* खर्जूर (Sans.); this is a pleasant tasted toddy,

* "Ex hac palma præcissis junioribus spadicibus fœmineis, manet liquor, ex quo ab Indianis fit vinum, *sura* dictum, etiam saccharum." Flor. Cochin. vol. ii. p. 618.

† The pith of this tree is a kind of sago, and is eaten by the natives; the tree is common on Ceylon, and is noticed by Rumphius (Amb. i. tab. xiv.).

‡ See Crawfurd's History of the Eastern Archipelago, vol. i. pp. 447, 448.

much used in Mysore, and from which also a jaggarie, or sugar, is made.

I have been informed, that from healthy young margosa trees (melia azadirachta) a sort of toddy may be obtained, which the Hindoo doctors prescribe as a stomachic; and that from another species of the same genus, viz. mel. sempervivens, toddy also may be obtained. This last (bead tree) is the *bacäin* of the Hindoos of Upper India; its Sanscrit name is *mahā-nimba* महानिम्ब

In the islands of the Eastern Archipelago a kind of wine or toddy is drawn from the nipa palm (cocos nypa); this tree is employed for many useful purposes in those countries; its leaves being used for making mats, the pulpy kernels for making sweetmeats, &c. In Ternate this palm is termed *boho*, and in Amboyna *parena*, also *bulāin*.

Besides the purposes of drinking, making sugar and arrack, to which the toddies in India are applied, they are also used for making vinegar, by the bakers as a leaven for bread, &c. That of the Palmyra tree (already mentioned) is in high repute in the Eastern islands, and is there principally employed for making sugar, and it was upon the leaves of this palm that the Indians chiefly wrote, before the use of paper became common. In Java the borassus flabelliformis is called *suwalén*; in Timur *koli*; in Celebes *tala*, which is also the Hindoo name; the Malays call both the tree and leaf *lóntār*. Avicenna (206.) speaks of this palm under the name of دوم *doom*, as does Forskahl, in his "Flora Egyptiaco, Arabica" (126.). See "Historia rei Herbariæ" (vol. i. p. 271.).

CCXXXIII.

TURMERIC. *Munjil* மஞ்சள் (Tam.) *Timmer* تمر (Egypt. Arab.) *Huldie* هلدي (Duk.) *Zirsood* زرسود (Arab.) *Zirdchoobeh* زردچوبه (Pers.) .*Huldie* (Hindooie). *Kurkum* (Hebrew). *Arsina* (Can.) *Passapoo* also *Pampi* (Tel.) *Mangellacua* (Hort. Mal.) *Haradul* (Guz.) *Haridrā* हरिद्रा (Sans.) *Hulud* (Mah.) *Turtumaglio* (It.) *Keang whang* (Chin.)

CURCUMA LONGA (Lin.)

Cl. and Ord. Monandria Monogynia. Nat. Ord. Scitamineæ (Lin.)

This root the native Indians consider as cordial and stomachic; it is a constant ingredient in their curries, and is prescribed by the Tamool doctors in those watery diarrhœas, which are often so troublesome and difficult to subdue in weak habits. Bontius tells us, that in Java the same medicine is celebrated for its supposed virtues in facilitating child-birth, in mysenteric obstructions, and certain complaints of the urinary passages! The greater part of the turmeric used in India as a dye, medicine, or seasoner, is either the produce of Bengal, or is brought from Java. There is a wild sort which grows in Mysore, and there called *cād arsina* (Can.). Turmeric has now no longer a place in the London Dispensatory; it has, however, been celebrated in its day, in cases of hepatitis, jaundice, and dropsy, in doses of from a scruple to half a drachm. The native practitioners consider turmeric as an excellent application, in powder, for cleaning foul ulcers.

Turmeric is a common produce of the Eastern islands, where it is indigenous. Rumphius enumerates three varieties; a wild, and two better sorts. In Javanese, Bali, and Malay, it is termed *kūnýit;* in Amboynese *unin;* and in Ternatese *gorách*i, which, Mr. Crawfurd tells us, means *golden.* Turmeric has been analysed by Vogel and Pelletier. Mr. Brande notices the great quantity of colouring matter it yields on being digested in water or alcohol, regretting that it cannot be rendered permanent as a dye. No less than seventeen species of curcuma, as determined by Roxburgh, were growing in the botanical garden of Calcutta in 1814, all oriental plants, and most of them Indian. Our present article, curcuma longa, like the others of its genus, has no stem; it may be distinguished from the c. rotunda by its leaves being simply lanceolate, and lateral nerves very numerous. Koenig's description of the plant by Retzius is, in Roxburgh's opinion, quite exact. Flor. Ind. vol. i. p. 22. The root is too well known to require a particular description here; in its fresh state it has a rather unpleasant smell, somewhat resembling cerate, which goes off a good deal on drying; the colour is that of saffron, and the taste bitterish.

Seven species of curcuma grow in Ceylon, where the curcuma longa is called in Cyngalese *haran-kaha.* The curcuma longa grows wild in Cochin-China, and is there called *kuong huynh.* Loureiro gives us a long list of its medicinal virtues in lepra, jaundice, and other disorders. Vide Flor. Cochin-Chin. vol. i. p. 9.

CCXXXIV.

TURNIP. *Suljumi* سلجمی (Arab.) *Shulgum* شلغم (Pers.) *Navet* (Fr.) *Kabu* (Japan.)

BRASSICA RAPA (Lin.)

Cl. and Ord. Monandria Monogynia. Nat. Ord. Scitamineæ.

Turnips in India, as in Jamaica, are reared by means of seed from Europe, though what is brought from the Cape of Good Hope is often found to answer as well, at least on the Coromandel coast. Of all the European vegetables they are the seldomest found good in our Asiatic dominions, being, for the most part, what is called stringy, unless they are cultivated with much skill and care. The native Indians know them but by name, nor should they have been mentioned here, but that they are placed amongst the medicines of the Arabians and Persians, who consider them as diaphoretic. The seeds, which are commonly known in the Arabian bazars under the name of *buzirulluft* بزرالفت, are considered as hot and moist, and are administered in doses of two direms. The ancients, as we see by Celsus (lib. v. cap. xxviii.), used a fomentation prepared with turnips in those cases when the feet had become ulcerous from extreme cold: "In primis multa calida aqua fovendum est, in qua rapa decocta." When of a good quality, they are, in my opinion, one of our best vegetables, being delicious in taste, cooling, and gently aperient, though they have, perhaps unjustly, been deemed by some as difficult of digestion. One thousand parts of common turnips give about thirty-four of sugar,

and seven of mucilage, according to Brande. The varieties of turnip, as stated by Miller, are five, without including the Swedish turnip, now so much cultivated by our farmers in England and Scotland. The long-rooted turnip (the rapa sativa oblonga of Bauhin), he is inclined to believe, is a distinct species.

CCXXXV.

TURPENTINE, COMMON. *Kota* (Nepaul.) *Ratinge roomie* راتينج رومي (Arab.) *Zungbarie* زنگباري (Pers.) *Terebinthe* (Fr.) *Gemeiner terabenthin* (Ger.) *Trementina* (It.)

PINUS SILVESTRIS (Lin.)

Cl. and Ord. Monœcia Monadelphia. Nat. Ord. Coniferæ.

As a produce of an Eastern country, I have never met with common turpentine in India. Sonnerat informs us, that pitch is common at Pegu; nay, Symes* tells us, that the name of the pine tree there, is *toenyo;* and that the natives obtain turpentine from it. Kirkpatrick, in his Account of Nepaul (p. 109.) says, that the turpentine of the *sulla* pine, is sold in the bazars of that country, at the rate of ten seers for one rupee, and that its name is *kota.* The pinus silvestris grows commonly amongst the mountains of Japan, and is called by the Japanese *sjo.* It is also a native of Cochin-China, and is there termed *cay-thoung* (Flor. Cochin-China, vol. ii. p. 579.).

* See his Embassy to Ava, vol. ii. p. 373.

Turpentines are little used by the medical practitioners of India; but they, with their essential oil, are well known in Europe to be anthelmintic, stimulant, cathartic*, and diuretic. For expelling the tænia, the oil has lately been given in doses of from ʒss. to ʒij. with success, repeated every eight or ten hours, till the worm is expelled. It† has also obtained celebrity in chronic rheumatism, hæmorrhages, and epilepsy; topically it is employed with advantage, in cases of obstinate costiveness, and ascarides; and as a useful primary application to burns.

Turpentines‡ are administered in doses of from grs. viii. to ʒi. best diffused in water by means of mucilage, or the yolk of an egg. The oil of turpentine, in doses of from grs. xii. to ʒi. is diu-

* Dr. Latham has long considered it as a valuable medicine in epilepsy; in this case, it must operate chiefly by unloading the bowels. A certain affection of the head, approaching to intoxication, is apt to succeed to a large dose. See Paris's Pharmacologia, p. 541.

† See a most valuable paper by Dr. Copland on terebinthinous medicines, in the Medical and Physical Journal, vol. xlvi. p. 186—206.

‡ *Turpentine*, commonly so called, is a resinous juice which exudes from the wild pine (pinus silvestris), or Scotch fir; incisions having been previously made in the inner smooth bark, near the foot of the tree. *Oil of turpentine* is made by distilling this substance in a common still, when the oil will be found in the receiver. *Common resin*, or *yellow resin*, is the residue of the distillation of turpentine; when the distillation is performed without addition it is called *common resin*, or *colophony*, but when agitated with about one-eighth of fresh water, while yet fluid, it is named *yellow resin*. *Tar* is got by the application of heat, in a certain way, to billets of the branches of the tree (pinus silvestris). *Venice turpentine* is obtained from the *larch tree* (pinus larix). The *Canada balsam*, or *fine turpentine*, is collected from the pinus balsamea. The *Chio turpentine* is got from the pistacia terebinthus. *Burgundy pitch*, and the *thus* or *resin* of the London Pharmacopœia, are both obtained from the pinus abies, or Norway spruce fir, a native both of China and Japan. See Flor. Japon. p. 275., also Flor. Cochin-Chin. vol. ii. p. 579. The last exudes spontaneously; the first by means of incisions through the bark, deep enough to lay the wood bare. See Thomson's Lond. Disp.

retic: in larger doses its effects are more general on the system; and it is then best administered, combined with aromatics and spices, and rubbed up with mucilage or honey.*

Of the use of *resins*, I have said a little under the head of Resin. *Tar* I have found in India to be a useful application to foul ulcers, but very inferior to the *balsam of Peru*, which, applied externally on lint, has most positive and peculiar virtues in arresting mortification, and the dangerous progress of phagedenic ulcer; an effect, which I fully explained, as already noticed, in a paper addressed to the Honorable the Court of Directors, from India, in 1810, and which afterwards appeared in the Asiatic Journal for January, 1816. Of the use of *tar* in consumptive complaints (I mean inhaling the vapour of boiling tar), I have no experience. It has found a much abler advocate in Dr. Paris (Pharmacologia, p. 478.). Sir Alexander Crichton's Practical Observations on the subject, are extremely interesting; and merit from the public, that attention which is ever due to such distinguished authority. This much I can say, and which may bear a little on his plan, that previous to leaving India, I had been in the habit of recommending in phthisical cases, and often with evident advantage, that the patient should inhale the vapour arising from burning balsam of Peru, which had been previously mixed with a sufficient quantity of balsam copaiba, to render it less stimulating.

Eight species of pinus were growing in the botanical garden of Calcutta in 1814, three of which were oriental plants.

* Dr. Magee of Dublin is of opinion, that this medicine has not received due attention; he found it a safe and efficacious purgative. In obstinate constipation without a rival, and in *interitis*, *peritonitis*, and *colic* almost a specific. See London Medical Repository, Feb. 1826. p. 178.

CCXXXVI.

TYRE.

Under the head of Milk, at p. 220, I mentioned this article, and merely again notice it here, as by later accounts from India, I learn that it has been found most useful as a diet in the low stages of typhus fever. At page 225, I have spoken of the *milk tree* of South America; the milk of which was tasted by Baron Humboldt, and found to have a balmy smell, and to be free from all acrimony. I have since learnt, by turning to the fourth volume of his "Synopsis Plantarum Equinoctialium," p. 198, that he has bestowed on the tree, the generic name of *galactodendron;* he, however, still has some doubts regarding its proper place, as he asks the question, "an *brosimi* species?" adding *habitus ficus.* The specimen Mr. R. Brown saw, was too imperfect to enable that justly distinguished botanist to speak with certainty respecting it. At pp. 221 and 226 of this work, in notes, I have mentioned, that the seeds of two bassias, *longifolia* (Lin.), and *butyracea* (Roxb.), yield oily substances which are used as ghee or butter. The latter is the *fulwah* of the Almorah mountains; it has "a large trunk, alternate leaves, which are obovate-cuneate, obtuse-pointed; the flowers are long, numerous, large, pale yellow, drooping; berry long, generally pointed, fleshy, containing one, two, or three large seeds, the rest not ripened." Dr. Roxburgh, who describes the tree in vol. viii. p. 489, of the Asiatic Researches, says, that it much resembles the bassia latifolia, so much so as to be scarcely distinguished from it, except

by the corol. and stamina. Mr. Gott, in speaking of the b. butyracea, has observed (same vol. and page), that the people of the Almorah mountains eat even the dregs, after the finer parts have been extracted; consequently there can be little doubt of the wholesomeness of the purer butter, prepared from the kernels of the seeds (which look like blanched almonds), first by expression, and subsequently by exposure to moderate heat. It is of the consistence of hog's lard, is white in colour, so far not resembling the oily produce of the b. longifolia, which is of a greenish-yellow colour; the produce of the b. butyracea is, besides, a medicine of some note as an external application in rheumatism. The description of the b. longifolia, and its further uses, will be noticed in another part of this work. Roxburgh seemed to be of opinion, that the *shea*, or butter tree of Africa, mentioned by Park, in his Travels (p. 26.), can be no other than a bassia.

CCXXXVII.

VINEGAR. *Kādi* ಕಾಡಿ (Tam.) *Cirka* سرکہ (Pers. and Duk.) *Kadidia* (Cyng.) *Khull* خل (Arab.) *Chooka* چوکا (Malay.) *Poolla neelloo* (Tel.) *Canchica* (Sans.) *Vinaigre* (Fr.) *Essig* (Ger.) *Aceto* (It.) *Tsoo* (Chin.)

ACETUM (Lond. Disp.)

The native Indians use vinegar as we do, externally as a repellant, and in composing certain discutient fomentations; they are also in the habit of mixing it with gingilie oil, to make a cooling em-

brocation for the head, in cases of cephalgia. It is usually prepared from the toddy of the palmyra tree (see article toddy); and is coloured with a little burnt paddy (rice in the husk). Some of the more enlightened *Vytians*, know how to render vinegar stronger by distillation. The Edin. Pharmacopœia directs us to distil eight pounds of acetous acid in glass vessels, with a gentle heat; the two pounds which come first over are watery, and to be rejected; the four following, will be the distilled acetous acid; the residue is a stronger acid, but too much burnt. The native Indians are not acquainted with the mode of preparing the strong *acetic acid*; which is done by rubbing together a pound of dried sulphate of iron and ten ounces of the superacetate of lead; after which they are to be put into a retort, and distilled in a sand bath with a moderate heat, as long as any acid comes over. The acetic acid is well known to be stimulant and rubifacient; but is chiefly employed as a scent, and applied to the nostrils in syncope, asphyxia, and nervous head-achs. According to Berzelius, its ultimate components are:

Carbon - - - -	46·83
Oxygen - - - -	46·82
Hydrogen - - -	6·35
	100·00

Common vinegar, used internally, is not only a refrigerant, but (especially when taken in some warm gruel) a powerful diaphoretic. The Arabians, as a medicine, place it amongst their Attenuantia مُلطِّفات, and consider a mixture of it, with sal ammo-

niac and common salt, as one of their best يابسات ثروح *Yabisat-kérough* (Epulotics). This mixture they term سركه و نوشادر و نمک *seerkeh wu nowshadir, wu némúk.*

What is called in Mysore *sénnágálū* vinegar is much prized both by the Mahometans and Hindoos as a cooling drink, and is also employed as a common menstruum for medical purposes. It is obtained in the following manner:—The dews of night falling on cloths, spread over what is called in India Bengal horse gram (cicer arietinum) whilst growing, are thereby rendered slightly acid; and it is the liquor wrung out of these cloths in the morning, that is termed *sénágálu vinegar.* In Tamool it is, *cádálay poolipooneer*; *boot ká cirka* بوت کاسرکه (Duk.); *Sánighé pooloosu neeloo* (Tel.)

Several of the writers of antiquity, say much on the subject of vinegar. Avicenna was fully aware of its virtues as an external application. "Lanæ aceto imbutæ ac vulneribus adplicatæ repellunt inflammationes" (Canon. lib. ii. tract. ii.).

CCXXXVIII.

WALNUT. *Akiroot* اخروط (Arab. Hindooie and Duk.) *Jowz* جوز (Arab.) *Charmughz* چارمغز (Pers.) also *Geerdigān* گردگان (Pers.) also *Jouziroomie* جوزرومي (Pers.) also *Khusif* خسف (Arab.) *Noix* (Fr.)

JUGLANS REGIA (Lin.)

Cl. and Ord. Monœcia Polyandria. Nat. Ord. Amentaceæ.

Walnuts, we are informed by Captain Turner, in his Embassy to the Court of the Tishoo Lama, grow in great abundance in Bootan. Those of the province of *Kusistan*, in Persia*, are much esteemed, and are sent in great quantities to India. They are common in Armenia.† Kirkpatrick found them growing in Nepaul‡ and Thibet. Those of the last mentioned country are the best; in Nepaul they are termed *okher*. In Georgia they abound, and of a fine quality. The tree grows, Loureiro says, in the Northern tracts of China, and is there called *ho-lao* (Flor. Cochin-Chin. vol. i. p. 573.).

The French writers § consider the leaves of the tree as anthelmintic. From the nuts may be obtained, without fire, an oil which can be used at table: that which is procured by means of heat is supposed, by Virey, in his "Histoire Naturelle des Medicamens," to possess vermifuge properties; it is, besides, employed for varnishing, and burning in lamps. The French apothecaries prepare from nuts, "*distillés dans trois etats differens*," what they call "*eau de trois noix*," which they consider as hydragogue, in doses of from four to six ounces. The ancients supposed walnuts to be elexipharmic: the famous antidote of Mithridates was composed of two walnuts, two figs, and twenty leaves of rue, rubbed together with a grain of salt. By Virey's‖ work, quoted above, it appears, that the bark of the

* See Macdonald Kinneir's Geographical Memoir of Persia, p. 115.

† See the same, p. 319.

‡ See his Account of Nepaul, p. 81.

§ See Manuel de Plantes Usuelles Indigenes, par Loiseleur Deslongchamps, p. 554.

‖ See p. 295 of his Histoire Naturelle des Medicamens.

juglans cineria, which is a native of Canada, is anthelmintic, and an extract made with it, purgative.

Two species of juglans grow in the botanical garden of Calcutta; our article and the juglans pterococca (Roxb.), which abounds in the Garrow hills, and has got the Bengalie name of *bolus*.

The Arabians, in the days of Avicenna, that is about the beginning of the eleventh century, had some singular notions regarding walnuts; not the least remarkable was, that, in conjunction with figs and rue, they had the power of resisting poisons. Vide Canon. Med. lib. ii. tract ii. p. 90.

CCXXXIX.

WATER. *Tanneer* தண்ணீர் (Tam.) *Pānie* پاني (Duk. and Hind.) *Neeloo* (Tel.) *Māh* ماء (Arab.) also *Owzir* اوزر (Arab.) *Watoora* (Cyng.) *Ayer* (Malay). *Āb* آب (Pers.) *Āpa* आप, *Ila* जल, *Ambha* अम्भ, also *Pānīya* पानीय &c. (Sans.) *Panee* and *jul* (Mah.) *Acqua* (It.)

AQUA.

The Hindoos are extremely particular about water, and ascribe many diseases to it when impure. By the *Padārtha-sindhu-mani*, a Medical Sastrum by *Aghastier*, on the qualities of ingesta, it would appear, that that celebrated Tamool writer considered the water of wells, or natural springs in the sandy beds of rivers, as the most wholesome; the next best, he

informs us, is river water, and then comes that of a fountain at the foot of a high land. The water of brooks or streamlets from a mountain-side, he tells us, is heating to the body, and that of tanks and reservoirs become stagnant, the worst of all, and apt to produce indigestions, obstructions, and lethargy, and to predispose to fever.

Generally speaking, the water of Hindoostan may be considered as good; that of rivers, of course, cannot be said to be so soon after heavy rains. The water of wells is sometimes brackish from an admixture of common salt, or muriate of lime.* That of tanks or reservoirs, being rain water, is usually soft.

Water, from its great solvent powers, is rarely found in a state entirely pure, but usually contains certain portions of earthy, saline, or metallic particles, according to the substances over which it passes. Dr. Heyne, in his "Tracts Historical and Statistical of India" (p. 4.), informs us, that *springs*, issuing from the surface, are almost as uncommon as mineral waters in Lower India, indeed, that they only occur on the tops of high mountains; the water of these is, for the most part, excellent. The same gentleman adds, that mineral waters, as far as he knows, do not occur on the Coromandel† coast; and that he had

* Dr. Heyne says, that these are the only mineral substances that he has found, by analysis, in different waters in India.

† Dr. Heyne, at the time he wrote the work above mentioned, could not have known of the chalybeate spring discovered at Bangalore, by Major W. Garrard, of the Engineer Corps, and so laudably brought to the notice of Government and the public by that gentleman. The virtues of this mineral water have been reported on by different medical officers, particularly by the late much lamented Dr. Greig, of his Majesty's service, who considered it as a valuable tonic and bracer in such cases as required medicines of this nature; as he did not examine the water on the spot, he could not ascertain the quantity of carbonic acid gas it contains; but Major Garrard writes me, that it is considerable,

heard but of one hot spring in the lower part of the peninsula, situated in the middle of the Godavery, near Bradachellum, about one hundred miles West of Rajahmundry.

The drinking water of Fort St. George is from a spring; it is, perhaps, the purest in the world, not even excepting that of Malvern, and it has this peculiar advantage, that it keeps at sea even better than that of the Thames; it has neither colour nor smell, and is altogether without taste; it is extremely light and fluid, wets easily, mixes with great facility with soap and alcohol, and makes admirable tea; nor is it rendered turbid by adding to it a solution of gold in aqua regia, or a solution of silver, or of lead, or of mercury in nitric acid; it exhibits the presence of fixed air, with the smallest proportion of earthy matter.

"The distinction of water into hard and soft (says Mr. Brande) has reference to its less or greater purity." Hard waters are unfit for washing in consequence of containing sulphate of lime, and curdling in place of dissolving soap, and this can at once be detected by adding to it a little of the alcohol solution of soap, when the water will imme-

and that he has often drawn the water in a state of effervescence. The other parts, according to Dr. P. Scott's analysis, are the following:

	gr.
Carbonate of iron - - -	— 50
Alumina - - - - -	— 10
Muriate of soda - - - -	— 75
——— lime - - - -	— 30
——— magnesia - - -	— 10
Silicea - - - - -	— 15
	1 90

diately become turbid. I need scarcely add, that hard water does not make good tea.*

The composition of water was a great step, as Mr. Brande has termed it, in the march of chemical science; what is due to Mr. Cavendish for this discovery, every man, with any pretensions to science, well knows; he it was who first found that a stream of pure hydrogen, burnt either in air or oxygen, produced a vapour condensible into pure water†; an experiment subsequently verified by the analytical researches of Lavoisier. The composition of water has been beautifully evinced by the experiments of Dr. Pearson, by means of the electric spark. Water has also been decomposed by the influence of the galvanic pile. With regard to the proportions of hydrogen and oxygen which go to compose water, Mr. Brande observes, that "100 parts of water consist of 88·24 oxygen, and 11·76 hydrogen.

Snow water was long supposed to occasion bronchocele, but that is not the case, as in mountainous parts of Sumatra the disease is found. Snow water differs from rain water in being destitute of air, which makes water brisk. A pint of sea water, according to Dr. Murray, contains muriate of soda 159·3; muriate of magnesia 35·5; muriate of lime 5·7; sulphate of soda 25·6; total 226·1 grains (see Paris's Pharmacologia, p. 272.). The tepid sea bath I found, in India, to be the best tonic in cases of pure debility and scrophulous affections; the gentle

* By referring to Avicenna, Canon. lib. ii. tract ii. p. 192., the reader will find some curious opinions regarding various kinds of water in his day, in Arabia; such as "epileptici juvantur ab aqua tepida, læduntur a calida; vapor marinæ aquæ curat cephalagiam frigidam."

† In the summer of 1781.

stimulus from the saline particles quickens the circulation and enlivens the spirits.

The excellent Mr. H. T. Colebrooke informs us, on the authority of Captain Gerard, that eight or ten hot springs were discovered in the valley of the Sutluj, in the Himalaya mountains, at a place called *Jauri*, betwixt *Fangal* and *Suniya*; one of these raised the thermometer to 130° Fahr., while the temperature of the river was 61° in April: and Captain Hodgson, in his journey to the source of the *Jumna*, found a hot spring at *Jumnotri*, in which rice was boiled; the water was tasteless, and had no particular smell (Asiat. Res. xiv.). Hot springs appear to be frequently met with amongst the Himalaya mountains.

Major Tod, late political agent with the Rajahpoot, states, an officer justly distinguished by his ingenious and laborious researches regarding the antiquities of Hindoostan, says, that "hot springs abound in India: those of Chittagong and Monghir are well known, each has its *Seeta koond*, or fountain of Seeta*; the water of these is nearly boiling hot, and such its purity, that it is often bottled for voyages to Europe. At *Gwalioar* there is a sulphurous well, which, blacksmiths think, has virtues in tempering steel. At *Macherry*, west of *Jeipour*, are many mineral springs, much used by the natives, who ascribe to them peculiar virtues in cases of debility. There is a strongly impregnated sulphurous well near the *Fountain of the Sun*, at the celebrated *Somnāth*, in Guzzerat; it changes silver to a yellow coppery hue in a short time. There are hot and cold springs close to each other at *Seetabarry*, in *Haroutee*; the water pure, with little or no mineral impregnation. There is another hot fountain in

* The wife of the Indian hero Rām.

Guzzerat, of very great celebrity, in the centre of the range which bisects the *Kattywar* peninsula; temperature of the water about 110°; it has no mineral impregnation." We are told by Morier, in his Travels in *Armenia*, that at *Arzroum* there are delightful warm springs. See work, p. 325.

CCXL.

WAX. *Méllugoo* மெழுகு (Tam.) *Moam* موم (Pers.) *Shuma* شما (Arab.) or شمع *Miettie* (Cyng.) *Lelin* ليلى (Mal.) *Minum* (Tel.) *Siktha* शिक्थ (Sans.) *Cere* (Fr.) *Wachs* (Ger.) *Cera* (It.) *Mehdoomul* (Hindooie). *La* (Chin.)

CERA.

The natives of India use wax, as we do, in the preparation of plaisters, and for burning, &c. In Lower India it is obtained of the finest quality, though, in Bengal, it is more considered as an article of commerce, and is, in consequence, purified in greater quantity. White wax is called in Tamool *vullay méllaghoo;* in Dukhanie *suffiad moom;* and in Tellinghoo *tella minum.* The yellow wax is in Tamool *munjil mellughoo;* in Dukhanie *peelah moom;* and in Tellinghoo *passapoo minum.* Wax is imported into India from *Nepaul*, from *Pedir*, in Sumatra, and from Palembang. For some account of the different sorts of bees to be found in India, the reader is referred to article Honey.

It would appear, that wax, as a principle, exists in many plants, and that all the varieties of it possess the same essential properties as that formed by the bee; such as that from the ligustrum lucidum, or

wax tree of China; and we know, that from the berry of the candleberry tree of America (*myrica cerifera*) candles are made, which, though dearer than tallow, are cheaper than wax; with this vegetable wax, or tallow, soap is also made, and, in Carolina, sealing-wax. The leaves and stem of the *ceroxylon andelocula*, by the process of bruising and boiling, also yield a sort of wax*; so does a plant called, in Brazil, *carna uba;* and we are informed by Mr. Brande, that the glossy varnish upon the surface of the leaves of many trees is of a similar nature. I see, by a late Number of the Asiatic Journal, that Dr. Tytler, of Bengal, had submitted to the Agricultural Society of Calcutta a curious artificial wax, made from various vegetable oils, chiefly castor-oil, and which was considered by the Society as a discovery capable of application to several of the most useful domestic purposes. What the particular process is, is not stated; whether by boiling the castor-oil in nitric acid, by which means it is converted into a solid matter, which resembles soft wax, but which, Mr. Brande has informed us, in his Lectures, has not consistence enough to be conveniently made into candles. Dr. John digested bees' wax and myrtle† wax in boiling alcohol, and thereby obtained two parts; one soluble, which he called *cerin*, the other insoluble, which he named *myricin:* the first, though not soluble in water, nor in cold alcohol and ether, yet dissolves in these when heated; *myricin* is insoluble under all circumstances in alcohol and ether.

* Sir Stamford Raffles informs us, that the wax tree grows abundantly in Java.

† The candleberry myrtle tree (myrica cerifera) is common in Southern Africa, where, Barrow says, they contrive to make candles from the berries, which are firm and good (see his Travels in Southern Africa, pp. 18, 19.).

Gay Lussac analysed wax, and found, that 100 parts consisted of 81·79 carbon; 6·30 of the elements of water; and 11·91 of excess of hydrogen.* See article Tallow† in this part and chapter of this work. With regard to the adulteration of wax it may be said, according to the Pharmacologia of Dr. Paris, that "to detect *white lead* it is necessary first to melt the wax in water, when the oxyde will fall to the bottom." Tallow may be suspected when the cake wants its usual translucency. Wax may be deprived of its natural colour, and be perfectly whitened by being exposed to the united action of air and water. Wax cannot be kindled unless previously heated and reduced into vapours. Much wax is exported from towns situated on the Hellespont, also from Romania, Bulgaria, Wallachia, and Moldavia. See Ollivier's Travels in the Ottoman Empire, vol. i. p. 351.

CCXLI.

WINE. *Shérab unghoorie* انگوري شراب (Duk.) *Khumar* خمر (Arab.) *Drakh ka mud* (Hind.) *Mey* مي (Pers.) *Vin* (Fr.) *Wein* (Ger.) *Vino* (It.) *Mada* मद *Madira* मदिर (Sans.)

VINUM.

VITIS VINIFERA (Lin.)

Cl. and Ord. Pentandria Monogynia. Nat. Ord. Hederaceæ.

Grapes can be very successfully cultivated in

* See Brande's Manuel of Chemistry, vol. iii. p. 54.

† Where it will be seen, that the tallow procured from the fruit of the vateria Indica has equally the properties of wax and tallow.

India, and of a peculiarly delicate flavour; but, owing to the great heat, by which means the vinous fermentation is rendered too quick, wine cannot be made, at all events, none has hitherto been prepared of a tolerable quality. In countries lying a little farther North, however, wine is made, and also spirit from it; for instance, in Cashmere, according to the testimony of Foster (Travels in 1783.). Wine is brought to India from Persia, where, by Tavernier's* account, three sorts are made: that of *Yesd* is very delicate; the Isphahan produce is not so good; the Shiraz is the best, being rich, sweet, and generous†; it is obtained from the small grapes called *kishmishes*, which are sent for sale to Hindoostan when dried into raisins. Niebhur‡, in his account of Persia, informs us, that there are two sorts of Shiraz wine, a red and a white, both of which are excellent, and find a ready market in India. Not less than 4000 tuns of Shiraz wine is said to be annually sent from Persia to different parts of the world. The greatest quantity is produced, by Mr. Morier's account, in his admirable "Journey through Persia" (p. 74.), in the district of *Corbal*, near the village of *Bend Emir*. Analysed, the red Shiraz wine is found to contain about 15·52 per cent. of alcohol; the white about 19·80 per cent.

Wine is well known to be forbidden by the Koran §;

* See his Persian Travels, book iv. chap. ii.

† Shiraz wine, analysed by Mr. Brande, was found to contain 15·52 per cent. of spirit, which makes it about as strong as Lunel wine.

‡ See his Travels in Persia.

§ This fact did not prevent Avicenna of old from highly praising its medicinal virtues: "Promtè descendit, ac concoquitur; alimentum præbet copiosum, laudabilem que procréat succum; moderate sumptum ciborum appetantiam excitat, immoderatus vero ingurgitatum, *obstructiones parit jecoris et renum.*" Canon. lib. ii. tract ii.

it is, notwithstanding, pretty liberally used under the rose* in all Mahometan countries, and is a never-ending theme with Hafiz, who, in one of his finest odes, has this most poetic and voluptuous exclamation:

گل در بر و مي بر کف و معشوقه بکامست

Which may be thus paraphrased:

With blushing roses in my breast,
While sparkling wine my goblet fills,
With, happier still, my Lælia blest,
What can I fear of earthly ills?

The Hindoos never touch wine, except when it is prescribed to them medicinally. The Persians consider it as a most valuable stomachic and cordial, and place what they call شراب میوها *shérab meywaha*, which signifies all kinds of fruit wines, amongst their *Adviyahheezeh*.

Wines are much drank by such European inhabitants in India as can afford them, and are certainly more conducive to health than arrack, which, in former years, was but too liberally indulged in. Those chiefly brought to table are sherry†, Madeira‡, port§, claret‖, and Cape Madeira.¶ The

* See Sir John Malcolm's History of Persia, vol. ii. p. 285.

† Good sherry contains about 19·17 per cent. of alcohol.

‡ Madeira contains about 22·27 per cent. of alcohol.

§ Port about 22·96 per cent. of alcohol.

‖ Good claret about 15·10 per cent. of alcohol.

¶ To these we may add Constantia, containing 18·92 per cent. of alcohol; Champaigne, about 13·30 per cent.; fine raisin wine, made with dried *kishmishes* from Persia, about 21·40 per cent. *Bucellas* is a favourite wine in India; it contains about 18·49 per cent. of alcohol. Delightful orange wine is made in that country; it contains about 10·97 per cent. of alcohol, and is, perhaps, the best of all wines not made from grapes.

first has a degree of bitterness in it, and agrees better with delicate stomachs than Madeira, which is of all wines, in my opinion, the most liable to produce acidity in the first passages, a fact so well established, that of late years it is little drank by the dyspeptic* in India. Port, in that country, is apt to bind, and should be taken with caution. Where there is either general inflammation, as in simple fever, ardent fever, or organic inflammation, as in hepatitis, &c., wine is a poison. In cases of pure languor and debility, in India, the safest and most certain cordial is claret, which is at once antiseptic, gently stimulating, and aperient. It has appeared to me, to be particularly indicated for such as are convalescent from typhus fever, in a great de-

* I am well aware, that this opinion is in direct opposition to very high authority, that of Dr. A. Henderson (see his admirable History of Ancient and Modern Wine), who says (p. 355.), that of all the strong wines Madeira is the best adapted to invalids; such may be the case in England, where my experience has been but of short duration, but in India it is far otherwise; there, that wine, from its acidulous nature, is apt to bring on heart-burn, and would seem to be particularly injurious in gouty habits. Dr. Henderson, in speaking of the Persian wines, says, "For the more common wines (not including the Shiraz) five difierent kinds of grapes are used, four white, and one black. This last is called *Samarcandi*, from the town of that name; it has a black skin, and produces a kind of claret." He moreover informs us (p. 266.), that "the Armenian merchants sometimes add saffron as well to improve the colour of the Persian wines, as to make them more pleasant in flavour."

For much curious information regarding the notions of the ancients on the subject of wine, which they sometimes called *cardiacum cardiacorum*, the reader may consult Pliny (Nat. Hist. book xiv.); in chapter xiii. of that book, he tells us, that in ancient times the women of Rome were not permitted to drink wine; in the twelfth chapter, he observes, that wine did not begin to be in much reputation in the great city till about six hundred years after the foundation of it. Romulus sacrificed not with wine, but with milk. In chapter xvi. is a full account of the made wines used in those days, such as that prepared from various garden herbs, flowers of trees and shrubs, &c.

gree owing, perhaps, to its powerful antiputrescent* quality; and to prove how much nature herself seems to be in unison with this opinion, I may state, that I knew an instance of a delicate lady, who, for several days together, after recovering from a nervous fever, took, while at dinner and after it, a whole bottle of claret without feeling, in the slightest degree, inebriated.

Cape Madeira (I mean that produced from the *groene druyf*) when of the BEST quality, and such as may now be had from several respectable wine merchants in London, is an excellent wine; it contains much less acidity than the common Madeira, and agrees admirably with weak stomachs. It seems to me, that this wine has undeservedly got a bad name, perhaps from the circumstance of much of a low price and an inferior quality having been exposed for sale; it is said to have an earthy taste, but this is not the case when it is well made, on the contrary, it is delicious and full bodied, with just enough of the Constantia flavour in it to be pleasant, and to mark where it was produced. I write this from long experience of its good qualities†, and shall further state, that, in a medical point of view, I know many delicate people,

* For many years before leaving India, I trusted much, and I may say with almost never-failing success, to the free use of ripe oranges in cases of typhus fever, with occasional blisters to the feet to keep up the energy of the circulation. The diet, panada alone; drink, lemon-grass tea.

† Quite aware of the strong prejudice that exists in England against Cape wine, I am the more anxious to do what I conceive to be justice to it, and shall, therefore, quote the words of a late distinguished writer in favour of it: "Les vins du Cap de *Bonne Esperance*, impregnés d'un arome-exquis, son tres-restaurans, et peutetre les meilleurs de tous les vins." See Chevalier Roques Phytographie Medicale, vol. ii. p. 215.

sufferers from dyspepsia and flatulence, who can take no wine except Cape Madeira, with impunity! It is rather strong, so that two glasses, one at, and another after dinner, are as much as invalids should indulge in. Analysed, it is found to contain about 20·51 per cent. of alcohol.

This is no place to speak of what are called made wines*, that is, of wines prepared from other fruits than grapes: that obtained from parsnips has been supposed, by some, to approach nearest to the malmsey of Madeira and the Canaries; and Mr. Phillips has assured us, that wine made from malt, when kept to a proper age, has as good a body, and a flavour nearly as agreeable as Madeira!! See articles Grape and Toddy in this work.

The Persians, by Sir John Malcolm's account, claim to themselves the discovery of wine, which, they say, was first made by the famous *Jemsheed*, one of the ancient kings of Persia; it has hence been called in that country *zéher-ekhoosh*, or delightful poison (see History of Persia, vol. i. p. 16.). From Persia it was, and also from the banks of the Rhine, that grape plants were originally sent to the Cape of Good Hope. Some of these from the first mentioned country now produce the red and white Constantia. Others, on other soils, the Cape Madeira; while those from the banks of the Rhine, and which the Dutch call *steen druyf*, yield a kind of Rhenish wine. See Dr. Henderson's "History of Ancient and Modern Wines."† Should the reader

* On this subject, the reader may consult Dr. Macculloch's very interesting Essay, "Remarks on the Art of Making Wine."

† In Caucasus and the Levant the vine is often found growing wild, which points out this as its original home; and in Madagascar, they make wine from honey, which they call *toak*; another

wish to know the different methods that have been adopted by Cadet, Proust, &c. for detecting impurities in wine, he may consult the work just cited, p. 342. See article Grape in this chapter.

Many remedies have at different times been recommended to allay the effects of intoxication from wine. Roques in his Phytographie Medicale, vol. ii. pp. 223, 224, says, that in slighter cases, a copious dilution* is extremely useful; and that in more alarming occasions, a few drops of aqua ammoniæ in water, had produced almost immediate calmness and collectedness.

CCXLII.

WHITING. *Kéllungā-meen* கெல்லுங்கா மீன் (Tam.) *Calandoo* (Cyng.) *Merlan* (Fr.) *Kúllengān mutchie* كلنگان مچى (Duk.) also *Diryaka Shankra* (Duk.) *Merluzzo* (It.)

GADUS MERLANGUS.

Whitings are common on the Coromandel coast, and are as much prized as they are in Europe, as a diet for those who are delicate; being very easily digested. This is the only fish which the *Vytians* allow their leprous patients to eat. The whitings in India are, generally speaking, smaller than the same

kind from the sugar-cane, which they term *toupare*; and a third kind is made from the *ontzi* (Bananas). See Copeland's History of Madagascar. Gooseberry wine well made, and with the fruit before it is fully ripe, is little inferior to Champaigne.

* A cup of strong green tea has also some effect in calming in cases of intoxication.

fish in Europe. The species merlangus differs from several others of the same genus (gadus.), in having the chin beardless.

CCXLIII.

WOOD, ALOES or AGALLOCHUM. *Pae de aloes* (Port.) *Chin-hiam* (Coch.-Chin.) *Aghir* (Duk.) قلمبک *Cálúmbūk* (Arab.) *Bois d'aloes* (Fr.) *Aguru* अगुरु (Sans.) *Aggur*, *Agor* (Beng. and Hind.) also *Agha loochie* (Arab.) *Oudhindi* عود هندي (Pers.) *Sukkiang* (Chin.) *Sinko* (Kæmph.)

AQUILARIA OVATA (Lin.)
AQUILARIA AGHALLOCHA (Roxb.)

Cl. and Ord.. Decandria Monogynia.

What is commonly understood by *cálúmbac*, or *aloes wood*, in commerce, in Eastern countries, is the interior part of the trunk of the aquilaria ovata (Lin.), and which is, in fact, the dark part possessing a peculiar *aroma*, caused by the oleaginous particles there stagnating and concentrating; its pores are filled with a soft resinous substance, which is considered as a cordial by some Asiatic nations, and has occasionally been prescribed, in Europe, in gout and rheumatism. If I mistake not, it is what Celsus speaks of under the name of *aghalocki*, ranking it amongst his *Acopa* (lib. v. cap. xxiv.), or medicines which invigorate the nerves. The tree is the *garo-de-Malaca* of Lamarck, the *agallochum secundarium* (Rumph. Amb. 2. t. 10.), and may be found described by Loureiro, in his Flora Cochin-Chinensis (vol. i. p. 267.), under the appellation of *aloexylum agallo-*

chum; he informs us, that it is a large tree with *trunk* and *branches* erect, covered with a brown or grey *bark;* the *leaves* are alternate, about eight inches long; the *flowers* are terminating on many flowered peduncles; the wood white and inodorous. The same writer further observes, that "from the bark of the tree the common paper of the Cochin-Chinese is made; the *calumbac,* or inner part, is a delightful perfume, is serviceable in vertigo and palsy, and that the powder of it, by its corroborating power, restrains fluxes, vomiting, and lienteries." The aloes wood is noticed by Forskahl* (Mat. Med. Kahirina, p. 148.) under the name of عودتاواي. Avicenna, with his usual intelligence (p. 231.), tells us, that the tree which yields the calumbac is to be met with at *Mondelian, Kakelian,* and *Semandurinam,* and that its fruit, which he calls هرنوه, resembles pepper, and has a delightful odour. Dr. Roxburgh states, MSS., that the tree is a native of the mountains district East and South-East of Silhet, also of Asam, and grows to a great size, one hundred and twenty feet in height, with a trunk twelve feet round: *trunk* straight; *branches* nearly erect; *wood* white, very light, soft and porous; *leaves* alternate, lanceolar, smooth, and of a deep green; *flowers* numerous, small, pale greenish yellow, and inodorous; the fruit is about the size of a myrobalan, with a thick cortex opening into two, and containing two seeds. On the tree, as noticed by Roxburgh, Mr. H. T. Colebrooke has made some valuable remarks, which he very kindly allowed me to peruse; he observes, that it is

* The same writer speaks of a wood that is brought from India to Arabia, called عودتاواله, the powder of which is mixed with tobacco to make it more fragrant. Quere? (p. 149.)

not till the tree has been long cut down, and allowed to decay and rot, that the wood acquires its proper fragrance, to hasten which, it is for a time buried under ground; on being dug up again so much of it is selected as is of a dark colour and glossy appearance, and found, on trial, to sink in water; this is the best, and is called *ghark;* such as sinks but partially is termed *nim-ghark*, and what floats *semeleh;* this last is most common, but least esteemed. He further states, that in the *Tophet ul Muminin* we are instructed, that the tree grows in islands of China and India. The author of the *Akhliyarat-badu*, on the other hand, believes it to come from *Bandar-Chineh*, situated at ten days' distance from Java. Some recommend that the crude wood should be taken, but Mr. Colebrooke supposes, that this can only be intended as a caution against using that from which the essential oil had been extracted.

CCXLIV.

WORMWOOD, MADRAS. *Māshipattiri* மாசிபத்திரி (Tam.) *Afsanteen* افسنتين (Arab.) *Mustaroo* (Hindooie). *Dovana* (Can.) *Baranjāsif kowhie* برنجاسف كوهي (Pers.) *Wœl-kolondu* (Cyng.)

ARTEMISIA MADERA-PATANA (Lin.)

Cl. and Ord. Syngenesia Superflua. Nat. Ord. Compositæ Nucumentaceæ.

This plant is the *nelampāla* of the Hort. Mal., and differs from the artemisia Indica (Willd.) and others by growing close to the ground, by its soft leaves

widening outwards, and by its having alternate branches, round, flexuose, streaked, and pubescent.

I perceive by the Hort. Bengalensis, that there are no less than nine different species of artemisia thriving in Bengal; the present article, and the a. Indica, are, however, the only indigenous plants. The a. vulgaris finds a place in Fleming's Catalogue of Indian Plants, but when introduced into Hindoostan is uncertain, probably previous to 1794; its Sanscrit, Hindoostanie, and Bengalie names are the same, ناگدونا *nagadona.*

The leaves of the artemisia maderas-patana the Tamool doctors consider as a valuable stomachic medicine; they also suppose them to have deobstruent and antispasmodic properties, and prescribe them in infusion and electuary, in cases of obstructed menses and hysteria; they sometimes, too, use them in preparing antiseptic and anodyne fomentations, in the same way that its congener, artemisia abrotanum, is in Europe.

It is from the artemisia Chinensis that the Chinese prepare their *moxa*, which is used as a cautery by burning it upon any part affected with rheumatism or gout, a fact I find noticed by Loureiro, in his excellent work, entitled Flora Cochin-Chinensis*, also by Dr. Abel, in his Journey into the Interior of China (p. 216.). It would appear, however, that this substance can be prepared of a still more efficacious nature from the common mugwort (artemisia vulgaris). See Thunberg's Travels (vol. iv. p. 74.). In Lapland, for similar purposes, a fungous excres-

* "Ex plantæ hujus, foliis exsiccatis, et contusis fit *moxa* seu cauterum actuale non spernandæ efficaciæ ad discutiendes tumores, et dolores rheumaticos, ac arthriticos, levesque convulsiones." Vide Flor. Cochin-Chin. vol. ii. p. 492.

cence is used, found on old birch trees. I cannot conclude what I have to say under this head without observing, that moxa is also obtained from the artemisia Indica (Willd.).

Our article, and eight other species, grow in the botanical garden of Calcutta, all Indian plants, except the a. paniculata, a native of Persia. I perceive by Dr. Rottler's *Herbarium**, that he has lately described a new and beautiful species, which he calls *A. mauritiana.*

CCXLV.

YAM. See article Potatoe, in this part of the work.

CCXLVI.

YELLOW GUM-RESIN OF NEW HOLLAND.

XANTHORRHŒA HASTILE (Smith.)?

Cl. and Ord. Hexandria Monogynia. Nat. Ord. Asphodeleæ (Brown).

I hesitated about giving the yellow gum-resin a place in this work, and have only been now induced to do so, on finding that it has been noticed by Gray, in his valuable Supplement to the Pharmacopœias (p. 146); and that it has also lately attracted the notice of several distinguished medical practitioners. I ought first to premise, that two yellow

* A manuscript; which has been kindly lent to me by Sir Alexander Johnston, one of our most zealous and efficient promoters of Asiatic research.

gum-resins, from Botany Bay, are to be found in the apothecaries' shops of London, differing a good deal in appearance, but both emitting, on burning, a smoke of a similar odour, somewhat like that arising from a burnt mixture of storax and benzoin, or, perhaps, still more like that of balsam of Peru. Both are said to be yielded, by what has been called the *acarois resinifera;* but now are known to be from a species of xanthorrhœa. One of the substances is in appearance not unlike yellow arsenic, but more irregular looking, as if from agglutinative leaves; its smell, on burning, is already stated. Two-thirds or more of it, are soluble in spirit of wine; what remains is an extract soluble in water, and very astringent. The gum-resin entire is not soluble in water, but gives to it the smell of storax; to the taste it is peculiarly pleasant, fragrant, and balsamic, and its solution in alcohol has a thick, oily, or rather glutinous consistence. The other sort of yellow gum-resin resembles gamboge, is much darker coloured, and often found in conjunction with the bases of leaves, from which it would appear to have originally exuded, its inner surface adhering round the stem of the tree; it is far less soluble in alcohol than the first mentioned, leaving seven per cent. of an insipid grumous substance, neither soluble nor diffusible in water. Now the question is, are these from the same species of xanthorrhœa? Probably not, for all the seven species described by the excellent Mr. R. Brown* as New Holland plants, yield a yellow gum-resin; or may it be that the one is only purer, and

* See his "Prodromus Nov. Holland." Six of the seven species are, the *hastile, arborea, australis, media, minor,* and *bracteata.* Five of these belong to the colony of Port Jackson, and it is certainly from one of them that the yellow gum resin is obtained.

obtained with more care than the other? It is said, that the yellow gum-resin of New Holland is occasionally found lying in detached pieces under the tree; at other times it is found adhering round the stem, evidently poured from the bases of the leaves; both the yellow gum-resins burn with a flame like rosin when thrown into the fire. From the xanthorrœa hastile the natives of New Holland procure their long, slender, but straight and strong shafts, for their war-lances, the handles to which are fixed on, as I myself have seen in one instance, with the first-mentioned yellow gum-resin, which it would appear is a powerful vegetable glue. The xanthorrhœa hastile grows pretty straight, to the height of sixteen or eighteen feet, branching out into long, spiral leaves, which hang down on all sides; a peculiarity which has procured for this species the name of "*the grass tree*" from the English inhabitants of Port Jackson; and it is most likely this plant which yields, at all events, the inferior, if not both sorts of the yellow gum-resin.

The reader will find some account of what is called the *acarois resinifera* in Phillip's Voyage, also in White's Journal of a Voyage to New Holland; and an accurate analysis of the gum-resin itself, in Gregory's Dictionary of Arts and Sciences. With regard to the sort used medicinally in this country, I think there is no doubt but that is, or ought to be, what I have noticed as the purest, from whatever tree it is obtained. Gray says, simply, that it is antidysenteric, and employed for closing the mouths of wounds, however large or dangerous. Mr. Charles Kite, in his "Essays and Observations Physiological and Medical" (p. 141.), treats fully of the virtues of this resin, and mentions the great benefit derived from

it in a case of weakness after an attack of apoplexy; also of its good effects in debility after epilepsy, and in a case of irregular liver, in immoderate bleeding at the nose, and in hysteria, diarrhœa, flatulence, dyspepsia, &c.; and I have just learnt from Mr. John Frost, that he had been informed by Sir Gilbert Blane, that he had found benefit from the use of the yellow gum-resin in *lienteric fluxes:* the dose, a drachm of the tincture three or four times in the day. Dr. White is said to have ascertained it to be a good pectoral medicine. Mr. Kite administered it in powder, from ℈i. to ʒss. twice daily.

CCXLVII.

YEROOCUM PAWL. யெருக்கம்பால் (Tam.) *Akŕe ke dood* اکڑے کے دود *Jelledee pāloo* (Tel.) *Arka* अर्क (Sans.) also *Pratāpasa* प्रतापस (Sans.) *Mūdar* (Hind.) also *Ark* (Hind.) *Waduri* (Jav.) *Ushar* عشر (Arab.)

Milk of the ASCLEPIAS GIGANTEA.

ASCLEPIAS GIGANTEA (Lamarck).

Cl. and Ord. Pentandria Digynia. Nat. Ord. Contortæ.

I did not intend to have noticed this article here, it properly belonging to the second part of this publication; but that I find the asclepias gigantea has lately attracted much attention in Europe, as a remedy in leprous and other cutaneous affections. In justice to myself then I must state, that I gave it and another variety of the same plant, places in my work, entitled Materia Medica of Hindoostan, (published at

Madras so far back as in 1813,) on finding that they were articles of the Materia Medica of the Hindoos; which the reader may see, by referring to that work, pp. 127, 128. The other variety is the *vullerkoo*; it is called *suffaid akree* in Dukhanie, and *tella jelladoo* in Tellinghoo; it has several Sanscrit names, the most in use is *alarka* in Lower India. It is, properly speaking, a variety of the *yercum*, the milk of which is our present article; both plants in their leaves and stalks contain much *milky juice*, which, when carefully dried, is considered as powerfully alterative and purgative, and has been long used as an efficacious remedy in the *koostum* of the Tamools (lepra Arabum): the dose about the quarter of a pagoda weight in the day, and continued for some weeks. The root of the yercum has a bitter and somewhat acrid, or rather warm taste; it is occasionally given in infusion as a stimulant in low fever. Of the other variety, the *vullerkoo*, the bark is warmish, and when powdered and mixed with a certain portion of margosa oil, is used as an external application in rheumatic affections. In the higher provinces of Bengal, the arka (asclep. gigantea) is supposed to have antispasmodic qualities. Mr. Robinson has written a paper on elephantiasis, and which may be seen in vol. x. of the Medico Chirurgical Society, extolling the *mudar root* (yercum vayr) as most efficacious in that disease; as also in venereal affections. In the elephantiasis he gave it in conjuction with calomel and ant. powder, in a pill, consisting of half a grain of calomel, three of antimonial powder, and from six to ten of the bark of the root *mudar*, every eight hours. Mr. Playfair has also written a paper on the same root,

which may be seen in vol. i. of the Edin. Med. Chirurg. Trans., p. 414, wherein he speaks in praise of the alterative, stimulant, and deobstruent virtues of the bark, or rather rind below the outer crust of root, reduced to fine powder, in cases of syphilis, lepra, hectic fever, &c.; dose from grs. iii. to x. or xii. three times in the day, gradually increasing it; he also observes that it appears to cure the *bursautee** in the horse. Messrs. Robertson, Playfair, and others, seem chiefly to dwell on the virtues of the rind or bark of the root; but I must observe, that in Lower India, where I was for many years, I found the simple dried milky juice considered as infinitely more efficacious; and later communications from the East confirm me in this opinion. On referring to notes taken from a Medical Sastrum, written in high Tamool, and entitled *Aghastier Pernool*, I find the *yercum pawl*, which is the milky juice of the asclep. gigantea, strongly recommended as a valuable medicine in *neer covay* (anasarca); and considering the extraordinary effect it seems to have in purifying the habit, in cases of the most loathsome of all diseases, *lepra*, may I suggest that a trial be made with it in that yet more dreadful malady, cancer, which has hitherto baffled all our best endeavours. I shall say more of the *yercum shrub* (mudar) in the second part of this work; in the mean time I must observe, that a plant called *akand* or *akund* is apt to be confounded with the genuine one (asclepias gigantea) and they no doubt much resemble each other; but the petals of the akund point upwards, and form

* A disease which shows itself in open sores, and as it usually appears in the rainy season takes its name from the Dukhanie word *bursaut* (rain).

cup-like; but those of the true plant are reflected downwards towards the calix.

In Arabia Felix the asclepias gigantea is called *oschar*, which I am much inclined to believe must be the same name corrupted which we find it noticed under in Avicenna, viz. عشر Aŭshur (Avicen. 233.); we also find it noticed by Sprengel, in his "*Rei Herbariæ*," vol. i. pp. 252, 253. For interesting particulars regarding it, the reader may also consult *Abu Hanifa apud Serap.* (cap. 50.) and Alpinus Egypt. p. 86.

My excellent and much lamented friend, Dr. Klein of Tranquebar, informed me that he met with a plant in Southern India, called by the Tamools *voellárékoo*, a good deal resembling the asclepias gigantea, and which he was told possessed virtues as a febrifuge; he found on examination that it was an *exacum*, to which he gave the specific name of *hyssopifolium*. From the similiarity of name it becomes a question, therefore, whether it may not be actually the *vullerhoo*, which I have considered as a *variety* of the asclep. gigantea, or perhaps the *akund* above noticed; further and more minute investigation on the spot must clear up all those doubts.

CCXLVIII.

I. ZEDOARY, KAEMPHERIAN. *Malan kua* (Hort. Mal.) *Bhuchampa* (Beng.) *Kaha* (Cyng.) *Nagai mio* (Coch. Chin.) *Bhū-champakā* भूचम्पका (Sans.)

KAEMPHERIA ROTUNDA (Lin.)

CCXLIX.

II. ZEDOARY, ZERUMBET. *Pulāng-kilunggu* பூலாங்கிழங்கு (Tam.) *Kutchoor* کچور (Duk.) *Keechlie gudda* (Tel.) *Hinhooroo pecallieulla* (Cyng.) *Kakhur* (Hind.) *Capoor kichlie* (Tam.) *Zerumbad* زرمباد (Arab. and Pers.) *Karchūrā* कर्चूरा (Sans.) *Shoothee* (Beng.) *Bengley* (Jav.) *Katou inschi-kua* (Rheede).

CURCUMA ZERUMBET (Roxb.)

CCL.

III. ZEDOARY, TURMERIC COLOURED. *Castoorie Munjel* கஸ்தூரிமஞ்சள் (Tam.) *Ambie huldie* انبي هلدي (Duk.) *Junglie huldie* (Beng.) also *Bun huldie* (Beng.) *Judwar* جدوار also *Bar* بار (Arab.) *Castoorie passapoo* (Tel.) *Kua* (Hort. Mal.) *Zedoaire* (Fr.) *Nirbisi* (Hind.) *Nirvishā* निर्विषा (Sans.) *Zodoaria* (It.) also *Vana haridra* वनहरिद्र (Sans.) *Walkaha* (Cyng.)

CURCUMA ZEDOARIA (Roxb.)
AMOMUM ZEDORIA (Lin.)

It will be seen by this last, and the two preceding articles, what are the oriental names of the roots of three distinct plants of the class and order Monandria Monogynia, and nat. order Scitamineæ, and which, at different times, have been termed *zedoaries*. I need scarcely mention here the great confusion

which has so long existed regarding the substances, zedoary, zerumbet, zarnab, &c.; a confusion, perhaps, first introduced by the vacillating nomenclature of the Arabians; certainly not remedied by their commentators*, and, unaccountably, neglected by the medical and scientific men of a later age.

The able and discriminating Dr. Roxburgh has done more than any of his cotemporaries towards elucidating the subject in question, and his excellent account of Monandrous plants, in the 11th volume of the Asiatic Researches, will remain a lasting monument of his industry; yet even he confesses, that there are still difficulties to be surmounted, and contradictions to be reconciled; the natural consequences, we must conclude, of the many former indistinct observations and unscientific details. Under these painful impressions it is, with the greatest diffidence, that I offer the following remarks:

I. The ZEDOARY, KHAEMPHERIAN, which I have taken the liberty of calling this root, is, I am inclined to believe, the root of the kaempheria rotunda (Lin.), which grows in Ceylon, and is called by the Cyngalese *sau-kenda*. It is a native of various parts of Hindoostan, and also of Java, where it is called *koontshee*.† It is the zedoaria rotunda of Bauhin, and has been well described by Sir William Jones, in the fourth volume of the Asiatic Researches. On the Malabar coast it is termed *malan-kua;* and Rheede informs us (Hort. Mal. part ii. p. 18.), that

* "Si igitur ipsi Arabum principes, his de rebus, se dissentiant; frustra eas ex eorum scriptis distinguere tentabimus." Geoff. vol. ii.

† This is a beautiful plant, flowering in Bengal in March and April; *leaves* oblong, radical; *flowers* fragrant, purple and white; *root* biennial; there is no stem. See Flor. Indica, vol. i. p. 15.

the whole plant, when reduced into powder, and used in the form of an ointment, has wonderful efficacy in healing fresh wounds, and that, taken internally, it removes any coagulated blood or purulent matter that may be within the body; he adds, that the root is a useful medicine in anasarcous swellings. It is bulbous, about the thickness of a finger, ash-coloured outside and white within; smells like ginger, and tastes hot to the tongue.

II. ZEDOARY, ZERUMBET. This is, I believe, the curcuma zerumbet (Roxb.), and the amomum zerumbet (Willd.); it is the *lampooyang* of the Javanese, and the lampuium (Rumph. Amb. 5. p. 148.). Miller, in his Dictionary, speaks of it under the name of the broad-leaved ginger. The plant is a native of the East Indies, Cochin-China, and also Otaheite; and has been ascertained, Dr. Roxburgh tells us, to be that which yields the zedoary of the London druggists. The root is generally exposed for sale in Lower India, cut into small round pieces about the third part of an inch thick, and an inch and a half or two inches in circumference. The best comes from Ceylon, where it is supposed to be tonic and carminative. It is evidently the zerumbet of Serapio, and zerumbad of Avicenna*; and the following description of it, given by Geoffroy (vol. ii. pp. 150 and 154.), very closely corresponds with the appearance of the root under discussion: "Foris cineria, intus candida; sapore acri, amaricante aromatico; odore tenui fragrante, ac valde aromaticum, suavitatem, cum tunditur aut manducatur, spirante et

* Avicenna extols it highly: "Discutit flatus, cor recreat, vomitionem compescit; ad venenatarum bestiolarum morsus efficax est." Vide Canon. Med. lib. ii. tract ii. p. 118.

ad camphoram* aliquatenus accedente;" an account not materially differing from that given by Rheede (Hort. Mal. part ii. p. 13. tab. 8.), where the plant† is spoken of under the general name of several species of this genus, viz. *kua*. Its Tellingoo name is *keechlie gudda*, a name, however, which must not be confounded with *katsjula*, which is the appellation given to the kæmpheria galanga on the Malabar coast, and which is the *kontshur* of the Javanese, and *sonchorus* of Rhumphius. The smell of this last mentioned plant is aromatic, pleasant, and permanent; the colour of the root purplish outside, and white within; it is considered as stomachic and alexiterial.

The Tamools consider *pulāng-kilunggu* (zedoary zerumbet) as stomachic and tonic; but are, as far as I have understood, unacquainted with its supposed virtues in nephritic complaints, as noticed in the Hortus Malab. From its fragrant smell it is much used, in conjunction with castoorie munjil, which is the root of the curcuma zedoaria (Roxb.), in the bathings and purifications of the Hindoos. The modern Arabs consider *zerumbad* amongst their *Mokewyat Meoadeh* (Tonica), *Mufettehat* (Deobstruentia), and *Mobehyat* (Aphrodisiaca).

III. Zedoary, Turmeric Coloured. (Curcuma zedoaria‡, Roxb.) (Amomum zedoaria, Lin.)

* It is a curious enough fact, that one of the names given to this root by the Hindoos of Upper Hindoostan is *capur huldie*, which implies, that it smells of camphor; the same name is also sometimes bestowed on the ambi huldi (curcuma zedoaria, Roxb.).

† It has *leaves* green, petioled, broad-lanceolar; *flowers* shorter than their bractes, funnel shaped, and pale yellow.

‡ The plant is very beautiful, flowering in the hot season; *leaves* broad-lanceolar, entire; the *flowers* rise from the naked earth in large rosy tufted spikes, having a delicate odour; *root* biennial and tuberous.

This appeared to me, at first sight, to resemble a good deal the root called long zedoary in the excellent Edinburgh Dispensatory of Dr. Duncan, junior, with this exception, that its colour, externally, is more of a dirty yellow than an ash-grey. There are, however, more essential differences in the plants: the amomum zedoaria, according to Willdenow, being distinguished "foliis majoribus ovatis acuminatis;" the curcuma longa "foliis lanciolatis," &c. The root now under consideration is otherwise wrinkled, and, internally, of a brownish red, possessing an agreeable fragrant smell, and a warm, bitterish, and aromatic taste; its Sanscrit name, *nirvbisha* निर्विष implies, that the drug is used as an antidote to poison, and its Bengalese, Tamool, and Tellingoo names have evidently been given to it owing to its resemblance to common turmeric. The Mahometans suppose it to be a valuable medicine in certain cases of snake bites, administered in small doses, and in conjunction with golden-coloured orpiment, *kust* (costus Arabicus), and *ajooan* (sison ammi). The native women prize it much from the circumstance that they can give with it, used externally, a particular lively tinge to their naturally dark complexions, and a delicious fragrance to their whole frame.

There appears to be no doubt but that this article is the *judwar* of the ancient Arabians, who distinguished it from the *zerumbad* (curcuma zerumbet, Roxb.). The plant is a native of many parts of Hindoostan, and would seem to be the *zerumbed tommon* of Rumphius (Amb. 5. p. 168.).

CHAPTER II.

METALS AND METALLIC SUBSTANCES FOUND IN INDIA AND OTHER EASTERN COUNTRIES.

I.

ANTIMONY, SULPHURET OF. *Anjana kalloo* అంజనకల్లు (Tam.) *Sūrmah* سُرمہ (Pers. Duk. and Hind.) *Ismud* اثمد (Arab.) *Lán-jánúm* (Tel.) *Ungen* (Hindooie). *Sauvíra* सौवीर (Sans.) *l'Antimoine sulfure* (Fr.) *Spiessglance* (Ger.) *Sulfuro d'antimonio* (It.) *Soorma* (Mah.)

SULPHURETUM ANTIMONII.

I cannot learn that this metal has hitherto been found in our Indian dominions. Dr. Fleming informs us, that the proper grey ore of antimony is imported from Nepaul*; and we know that a galena, or sulphuret of lead†, is often sold for it in the bazars, under the name of *surmeh*; this is, in all probability, the same substance which the Arabians‡ call *kóhl* كحل. The greater part of the native anti-

* Other authority, however (Col. Kirkpatrick), says, that there is no antimony in Nepaul, see his Account of that country, p. 117.

† A circumstance which should be particularly attended to, or much mischief may be done. The galena of lead found in India is generally in a cubic form, of a steel-grey colour and metallic lustre. The sulphuret of antimony, on the other hand, is commonly of a lead-grey colour; its fracture radiated and shining.

‡ See Niebhur's Travels, vol. ii. p. 236.

mony which is met with in Lower Hindoostan is brought from Siam*, or from the interior part of the Burmah dominions.† In Persia, D'Herbelot tells us, that much of it may be found at a town called *Hamadānie*, and hence the not unfrequent Persian name for the article سرمه حاماداني *surmeh Hamadānie*. Captain Macdonald Kinneir says (Geog. Memoir, p. 224.) "it is also found in mountains South of *Helat*, in *Mekran*," and it would seem, by Kirkpatrick's account, to be a product of Thibet.‡ Mr. Elphinston found it in Cabul, in the country of the *Afreeds*. §

Sulphuret of antimony the native practitioners of India are occasionally in the habit of prescribing as an emetic in intermittent fever: they also prepare a collyrium with it, mixed with the juice of the ripe pomegranate. The Mahometan women apply it to the *tarsus* of the eye to increase the brilliancy of the organ, a custom I find also common in Persia.‖ The modern Arabs place sulphuret of antimony amongst their Anthelmintics قاطعات ديدان. See an Arabic work, entitled تذكره تسويدي; it is a general Treatise on Medicine, by Mohammed Ishāk.

Antimony was well known to the ancients: Pliny, the elder, who wrote his Natural History in the reign of Tiberius, A.D. 79., particularly mentions it, and says, that by some it was called *stimmi*, by others stibium, alabastrum, and larbason; as a medicine it was considered as astringent and refrigerent, and

* See Elmore's Guide to the Indian Trade, p. 307.

† See Syme's Embassy to Ava, vol. ii. p. 375. See also Franklin's Tracts regarding the Dominions of Ava, p. 129.

‡ See his Account of Nepaul, p. 206.

§ See his Account of Cabul, pp. 146, 147.

‖ See Mr. Scott Waring's Tour to Shiraz.

much used in complaints of the eyes. He also informs us, that it was put into those ointments which the Roman ladies used to beautify their eyes, and thence called *calliblephara*, having the effect of making them appear open, large, and fair withal!! See his Nat. Hist. book xxxiii. chap. vi.

Tartarized antimony is given by the European practitioners in India, with success, in very small doses of from a sixth to a sixteenth part of a grain, to produce ease and expectoration in pleurisy and peripneumonia; though I must here acknowledge, that in all such affections I have found ipecacuanha a safer and much more valuable medicine, in nauseating doses; the same medicine has no equal in simple dysentery, that is, dysentery not accompanied with hepatic derangement; in such cases, given so as even to produce daily a little vomiting, it has the happiest effects. I have found tartarized antimony to be a dangerous medicine in cases of typhus fever, in India, by lowering too much the vis vitæ; as an emetic, in the beginning of ardent bilious fever, it is given with most safety in small divided* doses. Three drachms of antimonial wine will vomit an adult, but this preparation is chiefly used for children, and, most successfully, in feverish attacks; a tea spoonful may be given in such cases every quarter of an hour till it excites full vomiting. For the croup of infants it is an invaluable medicine; to a child of three months old, the bowels having been

* Three grains may be added to a pint of the common saline mixture, or barley water, and two thirds of a wine-glassful taken every half hour till it vomits once. If it is required to make the ointment, often so successfully used in different diseases, applied to the skin, to produce local pustular eruption, ʒij. of the tartarized antimony is to be triturated with ʒi. of hog's lard.

previously briskly evacuated with calomel* and castor-oil, I have given, with the happiest effects, the following mixture: thirty-five or forty drops of antimonial wine is to be put into a table spoonful and a half of barley water, of this, fifteen or twenty drops may be given every ten minutes or quarter of an hour till it vomits freely; this emetic to be repeated twice daily. Timely and frequently repeated emetics are not to be dispensed with in such cases; in India, indeed, one ought even to be given before the first cathartic, the bowels being opened by an enema so as to lose no time.

The modern Arabs† place native antimony (*Ithsmid*), اثمد, amongst their Styptics, *Manyat roaf wu is shaluddum* مانعات رعاف و اسهال الدم.

Medicines are prepared from sulphuret of antimony in four different ways: 1. By trituration in the metallic state, united with sulphur; hence prepared sulphur of antimony. 2. By the action of heat with phosphate of lime; hence the antimonial powder. 3. By the action of alkalies; hence the brown antimoniated sulphur. 4. By the action of acids; hence tartar emetic. See London Dispensatory, by Thomson.

II.

ARSENIC, WHITE OXIDE OF. *Vullay Pāshānum* வெள்ளைபாஷாணம் (Tam.) *Suffāid soombul* سفيد سنبل (Duk.) *Turab ul halic* تراب الهالک (Arab.) *Súm ulfār* سم الفار (Pers.) *Sum-*

* The calomel to be continued every night at bed time as long as it may be necessary.

† Avicenna, in speaking of this substance, says, "Sanguinem è membrana cerebri profluentem sistit." Vide Canon. Med. lib. ii. tract ii. p. 42.

boolkhar (Hind.) *Wrongon* ورنغون (Mal.) *Tela pāshānum* (Tel.) *Wrongon* (Mal.) *Arsenic oxyde natif* (Fr.) *Arsenico üxneo* (It.) *Natur licker arsenico halk* (Ger.)

ARSENICI OXYDUM (Lond.)
ARSENICUM (OXYDUM ALBUM) Dub.

III.

ARSENIC, YELLOW SULPHURET OF, or YELLOW ORPIMENT. *Arídārum* வரிதாரம் (Tam.) *Haritālaka* हरितालक (Sans.) *Hurtal* هرتال (Hind. and Duk.) *Ursanikoon* (Arab.) *Zirneik zird* زرنيخ زرد (Pers.) Also *Yelliekood pashanum* (Tam.)

ARSENICUM FLAVUM.

IV.

ARSENIC REALGER, or RED ORPIMENT. *Koodiraypal pāshānum* குதிரைபல்பாஷாணம் (Tam.) *Manahsila* मनःशिल (Sans.) *Mansil* منسل (Hind.) لعل سنبل *Lal sumbool* (Duk.)

ARSENICUM RUBRUM.

V.

ARSENIC, GOLDEN-COLOURED ORPIMENT. *Pōnarridāram* பொன்வரிதாரம் (Tam.) *Vurki hurtal* ورقي هرتال (Duk.) *Swarna haritālam*, स्वर्ण हरितालं (Sans.) *Tauki hurtal* (Hind.)

ARSENICUM AURIPIGMENTUM.

If arsenic is to be met with at all as a native product in our Indian dominions, it must be in very small quantity. Mr. Elphinston, in his account of Cabul, informs us, that orpiment is there found at a place called Bulkh (see work, p. 146, 147.), combined with iron, arsenical pyrites, and sulphur (sulphuret); it is brought to India from China and Sumatra.* "The greater part of what is called the white oxyde of commerce, is obtained in Bohemia and Saxony, in roasting the cobalt ores, in making *zaffre*, and also by sublimation from arsenical pyrites;" from which last it is that what is termed the artificial orpiment is prepared.

The plain yellow sulphuret, or orpiment, is an article of trade from China†, and the Burmah dominions, where the realgar or red orpiment is likewise procured, as well as in Japan.‡ The first of these is of a lemon-yellow colour, running often into red and brown; it is usually got in large angulo-granular distinct concretions, also in concentrate lamellar concretions; it is soft and flexible, but not elastic. When extremely beautiful, bright, golden-coloured, and flaky, it has got the name of *vurki hurtal* (Duk.), or *leafy orpiment* by the Mahometans of Lower India; and this is the variety, I am apt to think, which has been by some authors§ termed arsenicum auripigmentum.‖ It is brought to India from the sea-ports of the Turkish dominions, though I have been told, that it is occasionally found in cen-

* See Marsden's Sumatra, p. 137.
† See Oriental Repertory, vol. i. p. 228.
‡ See Thunberg's Travels, vol. iii. p. 228.
§ Wall, t. ii. p. 163.
‖ It is what the Turks call *reusina*, also *chrisma*, and may often be seen in the markets of Venice and Marceilles; it is vended in the Levant as a pigment.

tral India, and from its appearance might, by careless observers, be confounded with yellow talk; but it is altogether different, being much heavier, and when thrown into the fire, it emits a blue flame.

The yellow sulphuret of arsenic, according to Klaproth, consists of 62 parts of arsenic and 38 of sulphur; it would appear to occur rarely in primitive mountains, and is principally met with in floetz rocks, in veins along with copper pyrites, iron pyrites, quartz and calcareous spar (Jameson's Mineralogy, vol. iii. p. 538.).

The arsenic realger or red orpiment (the sandaraca of Pliny, and σανδαραχη of the Greeks), is very common in the Indian bazars; it is of an aurora-red colour, which passes through scarlet red, and hyacinth-red; it is somewhat lighter in weight than the yellow orpiment, contains a great deal less sulphur, and is ideo-electric by friction, acquiring the resinous or negative electricity; internally it is shining, and is otherwise soft, brittle, and frangible. I have already said that this species of sulphuret of arsenic, is a product of the Burmah dominions and Japan*; it is common in many parts of Bohemia and Saxony. In Armenia it can be obtained of a very superior quality; and it appears, that it is also to be found along with other volcanic substances at Vesuvius and Solfatara. There is a coarse-red orpiment frequently exposed for sale in Lower India, called in Tamool *manocillel*, in Arabic *ustirka* عستركا, in Sanscrit *manahsila*, and in Persian *zirneiksoorkh*; it is used only as a paint.

The *Hakeems* (Mahometan doctors) do not give arsenic internally; but the *Vytians* (Hindoo doctors)

* The Chinese cut it into vessels and figures; it is, moreover, a pigment.

have for many centuries been in the habit of prescribing it (the white oxide) in very minute doses, not exceeding the fourteenth part of a grain; and in conjunction with aromatics, to check obstinate intermittent fevers; also in glandular complaints, and in cases where the patient is subject to apoplectic attacks, and in certain leprous affections.* See a Tamool Medical Sastrum, on the subject of nine metals, called *Kylasa Chintamanny Vadanool.*

In Europe, since Dr. Fowler called the attention of medical men to this medicine, it has been administered in dropsy, hydrophobia, chronic rheumatism, glandular tumours †, and various other diseases, (as particularly and ably noticed by Mr. Hill of Chester, in a paper which may be found in the Edinburgh Medical and Surgical Journal, vol. xix. p. 312). It does not appear, however, that in such cases its efficacy is at all established; as a tonic I can speak from experience of the virtues of what is called Fowler's arsenical solution, having frequently by the use of it, put a stop to intermittent fevers in India, when every thing else had failed. I usually began with five drops, increasing the dose to twenty, or twenty-five, twice in the twenty-four hours. Dr. Thomson seems to think, that the use of white oxide of arsenic is contraindicated in all cases attended with strong arterial action, or where there is the least tendency to pulmonary complaints; united with nickel or the compound of an arseniate, it has

* See a Tamool Medical Sastrum, entitled *Aghastier Vytia Anyouroo.*

† For a very full and interesting account of the use of arsenic in cancerous affections, the reader is referred to Dr. Good's most valuable work, the Study of Medicine, vol. ii. pp. 817, 818, 819; he concludes by saying, "it generally proves beneficial, and, in some cases, may produce a radical cure."

been given with success in epilepsy (Dr. Good's Study of Medicine, vol. iii. p. 546.). Of the external use of this mineral in cancer I can say little, as the disease is rarely seen in India; it has by some able surgeons of England been supposed to do more to improve the ulceration in such cases, than any other application that has been hitherto resorted to.*

To counteract the poison of arsenic, various methods have been recommended; in order to render it inert, solutions of the alkaline sulphurets, or of soap, or vinegar have been advised; Dr. *Yelloly* suggests the propriety of bleeding. *Hahneman* orders a pound of soap to be dissolved in four pounds of water, and a cup full of this solution taken every three or four minutes. For the best mode of ascertaining whether or not arsenic had been used as a poison the reader may consult a well written and scientific investigation, to be met with in the London Dispensatory, p. 55. The modern Arabian writers place arsenic amongst their *Múckúrhát* مقرحات (Versicatoria) see Ulfaz Udwieyeh. Dr. Paris, as appears by his Pharmacologia, places little reliance on sulphuret of potass, as an antidote in cases of poisoning with arsenic; and recommends exciting vomiting quickly, and copious dilution with fluids most likely to act as a solvent for the acrid matter, such as lime-water. For the use of arsenic and the orpiments in the arts in India, see another Part (III.) of this work.

* For some account of the effects of arsenic, as a poison, on vegetable substances, the reader is referred to a curious and interesting memoir of Marcet on this subject, noticed in the Journal of Sciences, Literature, and the Arts, No. xxxix. pp. 191, 192., by which it appears, that bean plants, watered with a solution of oxide of arsenic, died in little more than thirty-six hours.

Since writing the preceding part of this article (arsenic), I perceive, that Dr. Robinson found arsenic in small doses a useful medicine in elephantiasis, in India. See his paper on the elephantiasis of Hindoostan in the Medico Chirurgical Transactions, vol. x. See also Dr. James Johnson's excellent work on the Influence of Tropical Climates, p. 271.

VI.

COPPER. *Shémboo* செம்பு (Tam.) *Tāmbā* تانبا (Hind. and Duk.) *Tambran* (Tel.) *Tāmra* ताम्र or *Tāmraka* ताम्रक (Sans.) *Tambaga* (Mal.) *Mis* مس (Pers.) *Cuivre* (Fr.) *Kuper* (Ger.) *Rame* (It.) *Nóhass* نهاس (Arab.) *Tung* (Chin.)

CUPRUM.

This metal is found in several parts of Upper India, particularly in the *Jeypoor* dominions and vicinity of *Nejeebabab*;* and General Hardwicke mentions, that at *Nagpoor* and *Dhumpore*, places lying betwixt forty and fifty coss North and East of *Sirinagur*, two copper mines are worked during eight months of the year. In Lower Hindoostan a copper mine was discovered some years ago by Mr. J. B. Travers, then collector of the Ongole district, betwixt Poodala and Ardingie, which, for a short time, attracted notice, but seems to have fallen into disrepute; and Captain Arthur, of the corps of engineers, informed me, that he found it oxydized and combined with carbonic acid, forming a beauti-

* Sir John Malcolm speaks of copper mines lying a little North of Odeypoor, in Malwa. See Central India, vol. ii. p. 344.

ful emerald-green coloured copper, in Travancore; he also discovered it sulphuretted amongst the *Dupadie* hills, in the Cumbem district. The late Captain G. Rodney Blane* mentions a copper mine near *Kalsi*, in the *Nahan*, or *Sirmor* country. It is well known that there are copper mines in the *Callastry*, *Venkataghérry*, and *Nellore* districts; for an account of which, the reader is referred to Dr. Heyne's Tracts Historical and Statistical on India (p. 108.); and at the end of the volume will also be found the particulars of an analysis of a copper ore, discovered by the author just mentioned, and which Dr. Thomas Thomson considers as a new species, and has called it *anhydrous carbonate of copper*, owing to the absence of water in its composition. Dr. Heyne found it near the Eastern border of Mysore, and subsequent research has ascertained that it may be procured in abundance at *Ganypettah*, a village in the Venkataghérry district, about forty miles from Ongole. By the analysis†, given below, it will be seen, that this anhydrous carbonate of copper contains half its weight of metallic copper, and it would seem to possess another advantage over copper pyrites (the usual copper ore of Great Britain, indeed, of Europe), that it is much more easily smelted and reduced to a metallic state. By far

* See his interesting Account of the Sirmoor country, in a paper read at the Royal Asiatic Society, in Dec. 1823, and since published in vol. i. part i. of the Proceedings of the Society.

†

Carbonic acid	16·70
Black oxide of copper	60·75
Red oxide of iron	19·50
Silica	2·10
Loss	·95
	100·00

the greater part of the copper exposed for sale in our Indian dominions comes, however, from other countries.*

Copper is procured either in its *metallic state*, when it is crystallized in the form of native copper, or sulphuretted, in combination with iron, or with iron and arsenic, or it is got *united with oxygen*, and then sometimes combined with carbonic acid, or with arsenic acid, or with phosphoric acid, or with muriatic acid. The sulphurets are the most abundant ores, and these, in Britain, are procured chiefly in Cornwall. The native copper ore of Japan† is the purest in the world, and, by Kæmpher's account, as cheap as iron; but the Swedish is more ductile.‡ Copper is found in Cochin-China, in Siam, in the Burmah dominions §, amongst the *Philaran*‖ hills in *Timor*, in *Thibet*¶, in the island of *Bali*, and, Dr. F. Hamilton tells us, in *Nepaul;* also in great abundance in Sumatra**, where it is combined with a considerable portion of gold, likewise in the district of *Mandore*, in Borneo. It would appear by Le Gentil's Description of the Philippine Islands††, that this metal is

* In the Russian dominions copper is found in great abundance, especially in the *Altai* and Oural mountains.

† Du Halde says, vol. ii. p. 299., that it is extremely beautiful, and an export to China.

‡ By Grenfel's Observations on the Copper Coinage, it would appear, that the Cornish and Devon mines alone now yield about 80,000 tons of ore annually. For an interesting account of the celebrated and extraordinary copper mine in Dalecarlia, near *Fahlun*, in Sweden (which also yields silver and gold), the reader is referred to Dr. Clarke's Travels in Sweden; the copper is the finest in Europe.

§ See Franklin's Tracts regarding the Dominions of Ava, p. 63.

‖ See Malayan Miscellanies, p. 18.

¶ See Turner's Embassy to the Court of the Tishoo Lama, p. 372.

** See Macdonald's Account of the Products of Sumatra, Asiat. Res. vol. iv.

†† See his Voyage to the Indian Seas, vol. ii. p. 37.

common too in those delightful regions. Franklin, in his Tour from Bengal to Persia, informs us, that copper is found in Tauris; it is a product of Ceylon, and, by Morier* and Macdonald Kinneir's accounts, it can be obtained in abundance at *Sivas*, amongst the mountains South of *Helat*, in Persia, and in the provinces of *Mazenderaun* and *Kerman*, also in *Armenia*, at the mines of *Keban*† and *Arguna*. In Turkey, by Olivier's account, it is drawn from mines South of *Trebisond*, in the environs of *Tocat*, and in several parts of Asia Minor. Similar information is given us by Morier, in his Travels through Persia, Armenia, &c., p. 344. Captain Arthur saw at Columbo a crystallized silky carbonate of copper, which, he was told, had been found in the interior of the island, and there called *petong*. I need hardly say, that copper, fused with tin, forms *bronze* and bell-metal; and with zinc, or the oxide of zinc, called calamine, it forms *brass*‡, which the natives of India know how to prepare in a simple way. Other alloys of this metal are *tombac*, *prince's metal*, *pinchbeck*, and *similor*; these are all prepared with different proportions of zinc, are, more or less yellow, and are known to the Hindoos. *Prince's metal* is the palest, and has, therefore, most of the alloy; *pinchbeck* is redder, and contains more copper; tombac is of the deepest reddish hue, in it the proportion being still increased. The finest of all is the *similor*, which is also called *manheim gold*; it

* Copper is brought to India from Persia in large regular shaped cakes, ready for making brass. See Morier's Journey through Persia, p. 161.

† See Morier's First Journey through Persia, pp. 344, 345.

‡ Brass is *pettatéy* in Tamool; *peettle* ﭘﯩﺘﻞ in Dukhanie; *tambaga-koning* in Malay; *pittalie* in Tellingoo; and *pitalaka* पितलक in Sanscrit.

has the colour of gold, and resembles pinchbeck; it is from this that the spurious leaf-gold, laces, and other articles, are manufactured, and it is what is mostly gilt. What has been called *white copper*, and which is much used in China, Dr. Black supposed owed its distinguishing colour to nickel. Nicholson, on the other hand, thought it was an alloy of copper and arsenic; he adds, that if the quantity of copper is small it is both ductile and malleable, otherwise it is brittle. Considerable confusion seems still to exist with respect to the articles zinc, tuttenag, and white copper, in Eastern countries. Nicholson says, tuttenag is a name given, in India, to the semi-metal zinc; that is true: then, he says, it is also given to the white copper of China, a compound, he observes, some think, of copper and arsenic. This much I know to be the case, whatever the tuttenag* of China may be, it differs from what the Chinese call *white copper*, a substance of which they are extremely jealous, and will not permit it to be exported; it is a peculiar product or manufacture of China, natural or artificial. Dr. Andrew Fyfe analysed some (it was, I believe, a basin which Dr. Hewison procured in China), and found it to consist of copper, zinc, nickel, and iron†; it is supposed to be procured from the reduction of an ore containing these ingredients; and Dr. Dinwidie states, that the *pak-fong*, or *white copper* of China, is composed of copper, nickel, and zinc (without iron); the quantity of the zinc amounting to seven-sixteenths of the whole, and

* Sir George Staunton informs us, that tutenag is, properly speaking, zinc extracted from a rich ore or calamine. Embassy to China, vol. ii. pp. 540, 541.

† By Sir George Staunton's account, a little silver, and, in some specimens, a small portion of iron is found in the white copper. See same vol. and pages.

the proportion of the two first are to each other as five to seven.

While on the subject of white copper, I cannot avoid adding here what has been said of it by Keferstein, and which may be found in the Annal. de Chem. xxiv. p. 24.: "This is a metallic substance resembling silver, which has been employed, under the name of white copper, for a long time at *Suhl* in ornamenting fire arms. M. M. Keferstein and Muller have recently sought out the origin of this substance, and ascertained that it is got in the scoria of some ancient copper works formerly attached to mines now abandoned; this white copper*, which had formerly been rejected as useless, is now obtained by fusion, for the purpose above stated." The Malay gongs are a composition of copper, zinc, and tin, in proportions not yet determined.

The Romans appear to have got most of their copper from the island of Cyprus, and from certain situations amongst the Alps. Pliny says much on the subject of this metal, both with regard to its use in the arts and in medicine; he gives various prescriptions for colyriums, in which copper was a prime ingredient, and speaks of two different methods for preparing verdigris; one preparation, he terms *scolecia*, was made by keeping for a time, in very hot weather, certain proportions of alum, nitre, and strong white-wine vinegar in a pot of Cyprian copper. See Nat. Hist. book xxxiv. chap. xii.

* Mr. Brande, by analysis, found what is called white copper to be an alloy of copper and nickel. Manuel of Pharmacy, vol. ii. p. 242.

VII.

COPPER, SULPHATE OF, or BLUE VITRIOL. *Toorishoo* துரிசு (Tam.) *Neelatota* نيلة توتة (Duk.) *Tutiya* توتيا (Hind.) *Zungbar* زنگبار (Arab.) *Toorishie* (Tel.) *Tutthānjana* तुत्थाञ्जन (Sans.) *Palmanicum* (Cyng.) *Sulphate de cuivre* (Fr.) *Schwefelsaures kupfer* (Ger.) *Vitriuolo blo* (It.) *Caparosa* (Span.)

SULPHAS CUPRI.

VIII.

COPPER, SUB ACETATE OF, or VERDIGRIS. *Vungālăp-patchei* வங்காளப்பச்சை (Tam.) *Zungar* زنگار (Pers.) *Pitrai* پترای (Hind.) *Zunjar* زنجار (Arab.) *Sennang* سنانغ (Mal.) *Zenghaliepatsæ* (Tel.) *Pittalatā* पित्तलता (Sans.) *Vert de gris* (Fr.) *Grunspan* (Ger.) *Verdégrise* (It.) *Cardenillo* (Span.)

SUBACETAS CUPRI.

I cannot learn that this article, verdigris, or that immediately preceding it, is ever prescribed, internally, by the Indian practitioners; the first they use externally, as we do, and they are both employed by them as detergent and stimulating applications for ill conditioned ulcers.

Sulphate of copper is sometimes given as an

emetic in the early stages of phthisis*, and where laudanum has been taken as a poison; the dose from gr. i. to x. or xv. in about ʒij of water; it acts quickly and easily, and may be given with advantage in cases of over-eating, where apoplectic symptoms are produced.

Verdigris (acetate of copper) is well known to be principally manufactured at Montpellier, by stratifying copper plates with the husks of grapes, which remain after the juice has been pressed out; these soon becoming acid, corrode the copper; by digesting the oxide thus obtained in acetic acid, and subsequent evaporation, crystals of acetate of copper, commonly called verdigris, are procured. We are informed, by Dr. Thomson, that the Grenoble verdigris is a purer subacetate, being prepared by simply disposing plates of copper in a proper situation, and repeatedly moistening them with distilled vinegar till the surface is oxidized and changed into verdigris.

Verdigris is now commonly avoided as an internal medicine, though, in doses of half a grain, it has been considered as tonic, and extolled in epilepsy; but many prefer, for this purpose, the cuprum ammoniatum, in doses of a quarter of a grain to five grains; as an emetic, in cases requiring quick operation, verdigris is given in doses of from gr. i. to grs. iij. In the arts it is occasionally employed in India, as in Europe, in dyeing cotton black, also of an orange shade, and green; it is likewise used in the preparation of colours, chiefly greens, and, with the assistance of sal ammoniac, a beautiful blue.

The sulphate of copper (sulphas cupri) is obtained,

* See Dr. Simmon's Practical Observations on the Treatment of Consumption. Dr. Good would seem, in such cases, to prefer ipecacuan. Study of Medicine, vol. ii. p. 770.

in considerable quantity, by evaporation from the water of some copper mines, such as *Parys*, in Anglesea, where it occurs along with copper pyrites, and from which it can be procured by roasting and exposing them to the action of air and moisture. It is a product of Pegu*, from which country it is brought to India; externally, it is a useful escharotic to consume fungus, and is well known to the Mahometan medical men. In Europe it is employed in making ink, also in the process of cotton and linen printing, and the oxide, separated from it, is used by painters.

Poisoning† from cooking and other utensils made of brass or copper is by no means a rare occurrence in India, where, however, they are not unacquainted with the art of tinning such implements. I have known more instances than one of fatal consequences from the use of butter milk that had been kept till it got sour in a brass pot; on other occasions, food having been allowed to stand for some time in a copper pan, after it had been taken from the fire, becomes a poison by admitting of the formation of a green carbonate: in the first case (that in which butter milk was used) verdigris was produced, which, however, would more speedily have been the result if the contents of the pot had been vinegar, or lime juice, in place of butter milk. In order to detect

* See Franklin's Tracts regarding the Dominions of Ava, p. 129.

† By Marcet's interesting Memoir on the Action of Poisons on the Vegetable Kingdom, it appears, that a bean root placed for twenty-four hours in a solution of sulphate of copper occasioned the death of the plant. See Journal of Sciences, Literature, and the Arts, No. xxxix. p. 193. Mr. Phillips found similar effects from a solution of copper used for watering a young poplar tree; a knife employed in cutting a branch of which had the copper precipitated on its surface. Annals of Philosophy, xviii.

the salts of copper, in any suspected liquor, Dr. Thomson directs us to drop into it a solution of ammonia, which, if any salt of copper be present, will produce a beautiful blue colour; he adds, that in cases of poisoning from any of the salts of copper, sugar is the best antidote.

I stated above that I could not learn that the natives of India ever employed either the *vungala patchei* (verdigris), or the *toorushoo* (blue vitriol) internally, yet they have several preparations of this metal (passpoms) which are peculiar to themselves, and which the reader may find particularly described by Dr. Heyne. What is called the *white passpom*, or *tampuru passpom*, is made, he tells us, "by plunging a copper coin made red hot into the acid juice which is expressed from the leaves of the tamarind tree; this to be repeated several times, after which the coin is to be melted in a crucible, with an ounce of sulphur thrown into it at two different times; grind this mass, moistening it with the juice of lemons which will render it white."* Dr. Heyne next mentions a preparation called *bhastmon*, which is certainly a most strange, complex, and heterogeneous compound, too much so, indeed, for particular insertion here; thus much I shall state, however, that it contains copper, egg shells, muriate of ammonia, corrosive sublimate, borax, orpiment, mercury, and lime. It is, by Dr. Heyne's account, administered in leprosy and other cutaneous affections, and, in obstinate cases, it must, he says, be persevered in for forty days. Missy is the name of an oxyde of copper, used by the natives of India against the tooth ache, and to stain their teeth black.

* See Tracts on India, pp. 170, 171.

IX.

GOLD. *Pwonn* பொன் (Tam.) *Soonā* سونا (Duk. and Hind.) *Tibr* تبر (Arab.) also *Zeheb* ذهب (Arab.) *Tilla* طلا (Pers.) also *Zir* زر (Pers.) *Run* (Cyng.) *Búngārum* (Tel.) *Mās* ماس (Mal.) *Swarna* स्वर्ण and *Sŭwarna* सुवर्ण (Sans.) *Or* (Fr.) *Goud* (Dut.) *Guld* (Dan.) *Oiro* (Port.) *Sonā* and *Swarna* (Mah.)

AURUM.

India properly so called, has not much to boast of with regard to this metal. Captain Warren discovered a gold mine in Mysore, in 1800, betwixt *Annicul* and Poonganore, but which does not appear to have been thought deserving of much notice; the metal, as far as I can learn, is disseminated in quartz*, (similar perhaps to that which is found in some parts of Hungary). Gold too, I understand, was discovered in the Madura district, by the late much to be lamented Mr. Mainwaring, mineralized by means of zinc, constituting a blende, perhaps resembling somewhat the *Schemnitz blende* of Hungary, and we know from Cronstedt, that the zinc ores of *Schemnitz* contain silver, which is rich in gold. Captain Arthur informed me, that he found gold in Mysore disseminated in quartz, and also in an indurated clay; some specimens he observed, likewise crystallized in

* Gold, it would appear, is oftener found imbedded in quartz than any other stone, though it is also, occasionally, met with in limestone, in hornblende, &c.

minute cubes; in which form we learn from the authority of *Brünnich*, that gold is sometimes met with in Transylvania, where it is also to be obtained in solid masses, as in Peru. In the Spanish West Indies gold is oftener seen in grains; Siberia being, I believe, the only country in which it can be got composed of thin plates, or pellicles, covering other bodies. Captain Hardwicke says, gold can be procured from certain sands in the Sirinagur country, and we know it to be a product of *Assam*.*

Gold is more generally found native than any other metal, though Bergman was of opinion, that it never was discovered altogether free of alloy; and Kirwan says, it is seldom got so. Gold dust has been got in the bed of the *Godavery*, and in Malabar, in the bed of the river which passes Nelambur, in the Irnada district; it has moreover been procured in very small quantities in *Wynade*, in the Arcot district; also near *Woorigum* and *Marcoospum* in the Pergunnah of *Colar;* and in the sand of the *Baypoor* river, near *Callicut*. Pennant, in his View of Hindoostan (vol. i. p. 181.), tells us, that gold is to be found in the rivers of the Panjab; and other travellers say it exists in the channels of certain rivers of Lahore. † Kirkpatrick observes, in his Account of Nepaul (p. 45.), that a little is to be met with on the borders of that country; but that in Thibet it abounds. From Kinneir's "Geographical Memoir of Persia" (p. 340.) we learn, that there are gold mines in Georgia; and Tavernier, in his "Tra-

* See Gladwine's Asiatic Miscellany. See also Asiatic Annual Register for 1805, p. 123.

† But in all these rivers in much less quantities than what are found in the river *Avanyos*, in Transylvania, or in the beds of several torrents of Brazil.

vels" (chap. x.) informs us, that there are both gold and silver mines in *Mengrelia*, now included in Georgia; one called *Souanet*, the other *Obelet*, about five or six miles from *Tefflis;* he adds, that there is also a gold mine at *Hardanoushe*, and a silver one at *Gunishe*, not far from *Trebisond.** In other territories lying still farther east this precious metal is found in great abundance; next to tin, Mr. Crawfurd tells us, in his excellent work on the Indian Archipelago (vol. iii. p. 470), gold is the most valuable mineral of the Archipelago; but it appears to be most abundant in those islands which constitute the Northern and Western barriers; Borneo affords by far the most; the principal are mines in the vicinity of *Sambas* or *Jambas;* next to it comes Sumatra, and in succession the *Peninsula* (Malayan), Celebes and Lusong. The gold of the Indian islands in regard to geognostic situation, is found, as in other parts of the world, in veins and mineral beds, as well as alluvial soils; in the first situations it exists in granite, gnesis, mica-slate, and clay-slate; and in the second in ferruginous clay and sand. The ore is what modern mineralogists term *gold-yellow native gold*, and always contains a considerable quantity of silver, and generally, though not always, some copper.

Gold, it would appear, has lately been discovered at *Santa Anna* in Estremadura; Japan† is rich in it, and the mines easily worked; the island of Formosa abounds in gold mines (Asiatic Journal for Decem-

* Fraser, in his Journey to Khorasan, informs us, that gold is found in a mountain called Altoun *Taugh*, in the Southern district of Bochara.

† See Crawfurd's Indian Archipelago, vol. i. pp. 319, 320, 321.

ber 1824.). Forest* tells us, that there is much in the island of Mindano; it is a product of almost all the Philippine islands†, especially of *Luzon* (Luconia), of Borneo‡, of Sumatra §, of Siam, of Pegu ‖, of Bali ¶, in the Straits of Java, of China **, of Tonquin, of the Burmah dominions, of Sulo (at Tambasuc), of Palembang††, of Thibet, and of Malacca; but perhaps in no part of the world is this metal found in greater abundance than in Cochin-China‡‡; nay, it would appear from a description of that kingdom, which may be seen in the Asiatic Journal, for 1801, that gold there is almost taken pure from the mines, which are near the surface of the earth. Niebhur, in his Travels (vol. ii. p. 366.), informs us, that it is a product of the kingdom of Mazambic, and of Abyssinia, and of late years much has been got in *Russia.* §§

* See his Voyage to New Guinea, p. 249.

† See Le Gentil's Voyage in the Indian Seas, vol. ii. p. 30. French edition,

‡ See a paper in the Malayan Miscellanies (p. 25.), by Mr. Hunt, in which he mentions the rich gold mines of *Laura*, in that island (Borneo), situated to the Eastward of the town of *Sambas*, also of those of *Tambasuk*; and Dr. Leyden, in his Sketches of Borneo, speaks of the gold of *Bonjar*, on the South side of the island. See 7th vol. of the Transactions of the Batavian Society.

§ See Marsden's Sumatra, p. 133.

‖ See Oriental Repertory, vol. ii. p. 479.

¶ At a place called *Pejen*, on the East coast of Bali.

** For some account of the gold of China, and the manner of using it in that country, the reader is referred to a curious paper by M. Landresse, which may be found in the Transactions of the Asiatic Society of Paris, taken, it would appear, from a Chinese work, entitled "A Description of the Arts of the Empire of China." See Oriental Herald for May, 1825.

†† The inferior sort of gold dust at Palembang is called *mooda*, or young dust; the best *tooa*, or old; the last, when purified, is most brilliant.

‡‡ See Bori's Account of Cochin-China, also Abbé Rochan's Voyage to Madagascar and the East Indies, p. 308.

§§ Sir Alexander Crichton tells me, that the richest gold mines

It would appear, that in former times, one of the grand sources of wealth of the Carthaginians, was derived from the valuable mines of Andalusia and Cordova. We are told by Aristotle, that when the Phœnicians first visited the coast of Iberia, they found both gold and silver in great abundance; nay, Pliny observes, "We have silver mines in many of our provinces, but how is it that the richest should be in Spain, and producing the finest and most beautiful silver?" (Nat. Hist. book xxx. chap. vi.)

Gold leaf (*soona wurk* سونا ورک) is prescribed by the native practitioners in consumptive complaints, and in cases of general debility, from its supposed virtues as a tonic, cordial and restorative. The opinions of the Hindoos respecting it, as a medicine, are to be found in many of the Medical Sastrums, especially in a celebrated Sanscrit work, entitled *Rasarutna Samoochayen*, by *Vackbutta*, in which medicaments prepared with different metals are fully treated of; it is also particularly noticed in a famous work in high Tamool, entitled *Kylasa Chuttamoony Vadanool*, in which medicines from the mineral world are minutely examined. The Arab-

---

in Russia are those of the *Oural* mountains, at a place called *Berezoff*, near *Catherenberg*; there are also mines in the *Altāi* mountains, especially at *Schlangenberg*, which signifies in Russian the mountain of serpents. By late accounts from Russia it would appear, that towards the end of the year 1824, eight thousand pounds of gold are expected to come from the Oural mountains mines, containing much platina; the value of that quantity of gold may be about one million of ducats. Now, at the beginning of this century, the whole of America did not produce more than seventeen thousand two hundred and ninety-one kilogrammes of gold per annum, and of this Brazils supplied six thousand eight hundred and seventy-three kilogrammes. Russia, this year, has yielded three thousand two hundred and eighty kilogrammes, being nearly the half of what is supplied by Brazil!

ians, according to Avicenna, considered this metal as somewhat similar in its virtues to hyacinth (cordial); and the same author tells us, that the filings of it were given in melancholia, "*limatura ejus ingreditur in medicinis melancholiæ.*" For other particulars the reader may consult the Arabic work, "*Canoon Fil Tibb*" قانون في الطب. The modern Arabs, like the Hindoos, reckon gold leaf amongst their *Cardiacs*, placing it in the class *Mokewyat-dil.*

Gold, in every part of the world, is found chiefly in its metallic state, though generally alloyed with silver, copper, iron, or all the three. South America* furnishes the greatest quantity. The principal gold mines of Europe are those of Hungary. It is the most tough and ductile, as well as the most malleable of all metals, more elastic than lead or tin, but less so than iron or even copper; hammering renders it brittle, but it resumes its ductility on being slowly heated; it is not sonorous, and is the heaviest of all bodies, platina excepted; for its fusion it requires a low degree of white-heat, somewhat greater than that in which silver melts. Gold mingles in fusion with all metals; it amalgamates very readily with mercury, and is remarkably disposed to unite with iron; every metal except copper debases the colour of

* The veins of native gold are most frequent in the province of *Oaxaca*, either in grains or mica slate; the last rock, Mr. Jameson tells us, is particularly rich in this metal, in the celebrated mines of Rio San Antonio. Baron Humboldt estimated the annual produce of the gold mines of South America at about 25,026*lbs.* Troy. It does not appear by the Journal of a Residence in Colombia during 1823 and 1824, by Capt. C. Stuart Cochrane, that that country is very rich in the precious metals; he says, the mines of *Chocó* are the most likely to prove productive under scientific management; those considered as worth working give two pounds of platina to six of gold. The reader is referred to the interesting pamphlet of Sir W. Adams for much curious information on the actual state of the Mexican mines.

gold; it gives it a red hue, and a greater degree of firmness than it has when very pure; hence the combination is employed in making coins, and different articles of plate, &c. The alloy with silver is made with difficulty; and forms the green gold of jewellers. Proper quantities of copper filings, nitre, prepared tutty, borax, and hepatic aloes, fused together by a skilful artist * give a beautiful compound, which much resembles gold.

With regard to the solution of gold, Mr. Kirwan was of opinion, that in its metallic state it may be diffused through the concentrated nitrous acid, though not dissolved in it; that able chemist found the aqua regia, which succeeded best in the dissolution of gold, was prepared by mixing three parts of the real marine acid with one of the nitrous; aqua regia made with common salt, or sal ammoniac and spirit of nitre, is less aqueous than that produced from an immediate combination of both acids, and hence it is the fittest for producing crystals of gold; one hundred grains of gold require for their solution two hundred and forty-six grains of aqua regia; the two acids being in the proportion above mentioned. The well known *aurum fulminans* †, which by Beckman's account, was discovered by a German benedictine monk in 1413, is gold precipitated from a solution of that metal in aqua regia, by means of ammonia; it explodes by heat with a greater violence

* See Smith's School of Arts, vol. i. p. 130.

† The fulminating property of gold was at one time supposed to be owing to the presence of the nitrous or marine acid. Black considered it as consequent of fixed air, but it is evident that is not the case, as gold fulminates as well when precipitated by the caustic volatile alkalie as by that which contains fixed air. Bergman considered volatile alkalie as the real cause of the explosion, and explained it on the principles assumed by him and Scheele.

than any other substance in nature; indeed with a strength, according to Bergman, one hundred and seventy-six times greater than that of gunpowder. While gold is indestructible by the common operations of fire, so is it altogether exempted from rusting. The best compound metal for making the mirrors of reflecting telescopes, is that made with an equal part of zinc and gold. With iron gold forms a grey mixture, which is very hard, and is said to be superior to steel for the fabrication of cutting instruments.

Gold is said to be mineralized, when it is mixed with some other substance, in such a manner as not to be readily acted upon by aqua regia; such as *by sulphur; with sulphur by means of iron*, as in the golden pyrites; *by means of quicksilver*, as in the auriferous cinnabar; *by means of zinc and iron*, as in the *Schemnitz blende*, already mentioned, &c. Gold is no longer in Europe considered as possessing any medicinal qualities, though the ancients* believed it to have such. The solution in aqua regia is a strong poison; if on this solution any essential oil is poured, the gold is separated from the acid, and is

* Pliny tells us, that in his time gold was considered as a sovereign remedy for green wounds, applied externally, and that the Roman mothers used to hang it about the necks of their children to preserve them from the spells of sorcerers; he moreover says, that, according to the testimony of M. Varro, gold makes warts fall off! See Natural History, book xxxiii. chap. iii. The author just cited informs us, that the Romans in the time of Nero used to obtain their gold from Dalmatia, and from the sands of the Tagus, in Spain; Po, in Italy; Hebrus, in Thrace; Pactolus, in Asia; and the Indian Ganges. Their scientific men, like those of later ages, busied themselves with alchymy, and Pliny very gravely observes, that the Emperor Caligula (who was a very covetous man) actually had a small quantity of that precious metal made by boiling orpiment dug out of the ground in Syria. See same book and chapter.

united to the essential oil; but this union does not last, for in a few hours the gold separates in a bright yellow film to the sides of the glass. A solution of gold, however, in vitriolic ether is more perfect than that with the essential oils. The yellow etherial solution poured off, and kept for some time in a glass stopt with a cork, so that the spirit may slowly exhale, yields long transparent prismatic crystals*, in shape like nitre, and as yellow as a topaz.

Should the reader wish to see a very curious detail on the alloys of gold, he may consult Philosophical Transactions for 1803, Experiments by Mr. Hatchet. The alloy of lead renders gold very brittle when that metal only constitutes $\frac{1}{1920}$ of the alloy. Gold coin is an alloy of eleven parts of gold and one of copper. Arsenic and antimony in very small proportions with gold, destroy its colour, and render it quite brittle. Mercury and gold combine with great ease, forming a white amalgam much used in gilding. See Brande's Manual of Chemistry, vol. ii. p. 291.

X.

IRON. *Eerumboo* இரும்பு (Tam.) *Loha* لوها (Duk. and Hind.) *Ahun* اهن (Pers.) *Eenumo* (Tel.) *Loha* लोह (Sans.) *Hedeed* هديد (Arab.) *Béssee* بسي (Mal.) *Yákádá* (Cyng.) *Fer* (Fr.) *Ferro* (It.) *Eissen* (Ger.) *Hierro* (Span.) *Tee* (Chin.)

FERRUM.

* See Encyclopædia Britannica, vol. iv. p. 528.

This metal is found in so many different parts of India that it may be considered as a common produce of the country. In Mysore, in the neighbourhood of *Baydamungulum*, it is smelted from a black iron ore, called in Tellingoo *nalla isaca*, in the Carnataca language *cari usu*, and in Tamool *carpoo manil*; in other parts of the same territory, lying betwixt Seringapatam and Bangalore, it is obtained from two ores, called *aduru kulloo* and *ipanada*; the last mentioned, Dr. Buchanan* informs us, is a very pure ore, found scattered among gravel in small lumps; near *Colangodoo*, in Southern Malabar, it is obtained from a dark coloured sand ore. Captain Arthur discovered, in Mysore, the magnetic iron ore, also the specular iron ore, or iron glance, which Dr. Heyne† likewise picked up among the Chittledroog hills, near *Talem*, and other places. Captain Arthur also discovered in Mysore the brown hematite‡, or fibrous brown iron stone, which, I am led to think, is the stone sometimes called by the Tamools *carin kulloo*. In the Palavarum district it would appear, by Dr. Heyne's§ account, that this metal is obtained from an ore composed of ochre, clay, scintillating spar, and calcareous earth. "At *Yerragutty*, near *Sautgur*, iron is smelted from what is called the iron-stone‖ of mineralogists, a subspecies of micaceous iron-stone, and which is powerfully attracted by the magnet." At *Ramanaka*, about six miles North of

* See Dr. Buchanan's Journey through Mysore, Canara, and Malabar, vol. i. p. 181.

† See Heyne's Tracts on India, p. 44.

‡ Or bloodstone, called by the Arabians *hujraldum* حجرالدم and by the Persians shadunj شادنج.

§ See Oriental Repertory, vol. ii. p. 485.

‖ See Heyne's Tracts on India, p. 191.

Nŭzid, this metal is smelted from an ore consisting of small rounded stones, lying loose and unconnected, and which do not appear to contain any calcareous matter. Dr. Heyne is of opinion, that though this ore does not exactly correspond with any common iron ores in England, it approaches nearest to hematites; he was disposed to term it a *hydrous carbonate of iron:* the charcoal employed in smelting it is made from the *mimosa sundra* (Roxb.). Much iron is manufactured in the *Nahn* or *Sirmor* * country, in the North of Hindoostan, also in the Nagpore Rajah's dominions †, particularly near the town of *Chowpara*, on the banks of the *Beingunga*. There is much iron on Ceylon ‡; on Java §; in Siam; in *Tonquin*, by Barrow's account, it abounds; it is not uncommon in *Cabul*, in the territory of the Afreeds, and in *Bajour*. A few years ago it was discovered to be a product of the island of *Billitten*, Eastward of Banka. Captain Macdonald Kinneir, in his Geographical Map of Persia (p. 224.), mentions, that it is to be met with in the mountains South of *Helat*, in *Mekran;* and Foster observes, in his Travels, that it is an export from *Turshish*. Valantyen found it in *Bali.* ‖ To India it is often brought

* Particularly on the hills near the great Lakandi, where, according to Captain Blane (in his Memoir on Sirmor), the ore yields one-fourth of its weight of pure iron.

† See Account of a Route from Nagpore to Benares, by Daniel Robertson Leckie, pp. 68, 69.

‡ It would appear, that the Ceylon iron ore is of a very superior quality: Mr. Russel lately laid before the Literary Society of that island a report, in which he notices, that the iron of certain places has this extraordinary property, that it is malleable immediately on being taken out of the furnace, a circumstance which, when known to manufacturers at home, cannot fail to attract great attention. See Asiatic Journal for August, 1823, p. 136.

§ See Civil and Military Sketches of Java, p. 207.

‖ See Malayan Miscellanies, p. 11.

from Pegu, where, it would appear, that it can be procured of a superior quality; also from Tonquin.

Iron has been discovered in almost every country of Europe; that of Sweden* is considered as the best. The native metal is scarce; most iron being found in the form of oxide, in ochres, bog ores, and other friable earthy substances, of a brown, yellow, or red colour. The iron which is obtained by smelting is not pure, but in the three following states, white crude iron, grey crude iron, and black cast iron, which last is commonly fused with white iron. When crude iron, especially grey, is fused again, in contact with air, it unites, sparkles, loses weight, and becomes less brittle, and may be converted into malleable iron by fusing it in the midst of charcoal, and then beating it for a time with a large hammer, so as to drive out all the parts that may still partake of crude iron; the remainder, on being thus made malleable, is so formed into bar iron; this purified, or bar iron, is soft, ductile, flexible, and malleable, and is what may be converted into steel†, in two ways, by cementation or by fusion. The English steel, a compound of iron with carbon, is made by a process called cementation‡, and afterwards, when

* For an animated account of the extraordinary and, it may be added, awful iron mines of Persberg, in Sweden, the reader is referred to Dr. Clarke's Travels in Sweden, &c.

† Steel is in Tamool *oorukoo*, also *yéghoo*; in Tellingoo *ookkoo*; in Persian and Dukhanie *foolad* فولاد; in Hindoostanie *khere* خرے.

‡ There is a particular kind of steel called in India *wootz*, which, from its superior quality, has attracted, of late years, much notice in England; it is prepared in several parts of Lower Hindoostan, especially at a small village South-West of Chittledroog, in the Mysore country, and at Kakerhally, a village on the road from Bangalore to Seringapatam (see Heyne's Tracts, p. 358.). "In order to convert iron into this steel each piece is cut

fused with a flux composed of carbonaceous and vitrifiable ingredients, it becomes what is termed *cast steel*, in bars, plates, and other forms; and is almost twice the price of other good steel. Nicholson, in his Dictionary of Chemistry and its Application to the Arts, tells us, that the *blueing* of steel affects its elasticity in a manner not easily explained, and is

---

into three parts, making fifty-two in all; each of which is put into a separate crucible, together with a handful of the dried branches of *tangedu* (cassia auriculata), and another of fresh leaves of the *vonangady* (convolvulus laurifolia). The mouth of the crucible is then closely shut with a handful of red mud, and the whole arranged in circular order, with their bottoms turned towards the centre, in a hole made in the ground for the purpose. The hole is then filled up with charcoal, and large bellows are kept blowing for six hours, by which time the operation is finished. The crucibles are then removed from the furnace, ranged in rows on moistened mud, and water is thrown on them whilst yet hot. The steel, or *wootz*, is found in conical pieces at the bottom of the crucibles, the form of which it has taken." Some of this Indian steel was some years ago sent to England to Mr. Stodart, by Dr. Heyne, who, after examining it, said, that, in his opinion, it was not, in the state in which it was brought from India, perfectly adapted for the purposes of fine cutlery, the mass of the metal being unequal, proceeding from imperfect fusion; therefore, it is that Mr. Brande recommends a second fusion, which makes it truly valuable for edged tools, and fitted for forming the finest instruments. Mr. Stodart concludes his letter to Dr. Heyne by observing, "this India steel, however, is decidedly the best I have yet met with." Mr. Stodart is of opinion, that the most proper mode of tempering *wootz* is by heating it to a cherry-red colour in a bed of charcoal dust, and then quenching it in water cooled down to about the freezing point. Mr. Brande seems to be of opinion, that the peculiar excellence of the Indian steel is owing to combination with a minute portion of the earths of *alumina* and *Silicia*, furnished, perhaps, by the crucible in making the steel, or rather with the bases of those earths, and, as a proof of this, he shows how wootz may be made artificially (Manual of Chemistry, vol. ii. p. 308.). Nay, Dr. Heyne himself observes, that it is not quite indifferent, in preparing the wootz, what crucibles are used in the operation; the loam employed for these crucibles, in Lower India, is of a brown-red colour, of an earthy appearance, and crumbles betwixt the fingers; it has no earthy smell when breathed on, nor effervesces with acids.

done by exposing steel, the surface of which has been first brightened, to the regulated heat of a plate of metal, or a charcoal fire, or flame of a lamp, till the surface has acquired a blue colour. It is a singular circumstance that the sword blades of Damascus are still considered as the finest in the world, nor is it known exactly how they are made, though I think it highly probable that they are made of the *wootz* steel of India.

XI.

IRON FILINGS. *Eerumboo pŏdie* இரும்பு பொடி (Tam.) *Arapodi* (Tel.) *Lohay ka boora* لوهيكا بورہ (Duk.) *Limailles de fer* (Fr.) *Gopulvertes eissen* (Ger.) *Limatura di Ferro* (It.) *Limadura hierro* (Span.)

LIMATURA FERRI.

XII.

IRON, RUST OF. *Eerumboo tuppoo* இரும்பு துப்பு (Tam.) *Lohayka zung* لوهيكا زنگ (Duk.) *Manura* मण्डूर (Sans.) *Kith* (Hind.) *Eenapatooppoo* (Tel.) *Carbure de fer* (Fr.) *Ossido carbonato di Ferri* (It.) *Sudeed ul hedeed* صدء الحديد (Arab.) *Zafrani ahun* زعفران اهن (Pers.) Σιδήρος (Gr.)

FERRI RUBIGO (Dub.)

I cannot find that *iron filings* are used in medicine by the Hindoos, and but rarely by the Mahometans,

who sometimes give them in cases requiring tonics, in conjunction with ginger. The Tamool name is *erumboo podie ;* the Dukhanie name is *lohay ka boora* لهو هيكا بورء. Indeed, in Europe, except when there is a decided presence of acidity in the stomach, they are seldom employed, as in dyspepsia ; in worm cases they act mechanically ; they are usually given in powder, combined with an aromatic, or in the form of an electuary; Dr. Thomson, and no man's opinion I value more, thinks best, in combination with myrrh, ammoniacum, or some bitter : the dose from gr. v. to ʒss.

The *rust of iron* the Hindoo doctors prescribe in certain cases of *mayghum* (cahexia), particularly that species of it combined with jaundice. By European practitioners it is considered as tonic and emenagogue, and, of late years, it has been used with good effect both as an external and internal remedy in cases of cancer; the dose from grs. v. to grs. xx. or xxv., twice daily. What are commonly called *scales of iron* (oxidized iron) the Tamools term *eerumboo kittum ;* they are those substances which are detached by the hammer of the smith from the surface of iron heated to redness in the forge. The native Indians, as far as I can learn, do not employ them in medicine. They are, when purified, an imperfect oxide (oxidum ferri nigrum purificatum), and have been given with good effects in general weakness, dose from grs. v. to gr. xv. The simple scales (squamæ) are used in the same manner as iron filings, and Dr. Thomson says, are preferable.

XIII.

IRON, SULPHATE OF, or GREEN VITRIOL. *Anna baydie* அணாபேதி (Tam.) *Heera cashish* هيرا كشش (Duk.) *Taroosee* (Mal.) *Casis* (Hind.) *Zunkar madenee* زنگار مادني (Pers.) *Tootya subz* (Pers.) *Sulphate de fer* (Fr.) *Schwefelsaures eisen* (Ger.) *Solfato di ferro* (It.)

SULPHAS FERRI.

This substance was, a few years ago, obtained in Travancore, by Captain Arthur, from an aluminous schistus.

Sulphate of iron is a dangerous medicine if not administered with caution; it is considered as tonic, emenagogue, and anthelmintic, and is given with success in diabetes, amenorrhœa, and phthisis, and, by Dr. Good's account, in dyspepsia (see his Study of Medicine, vol. i. p. 171.); lately it has been used as a lotion in cancerous and phagedenic ulcers. It seems to be very partially known to the Hindoos. It is administered in pills with rhubarb, myrrh, or aromatics, in doses of from gr. i. to gr. vi.

Iron, under any circumstances, is not a medicine frequently resorted to in India, where hepatic derangements and other visceral affections are but too common, and in which it is certainly injurious; in scrophulous complaints I have given it with marked good effects, and have been induced to think, that on such occasions it may act by supplying what is de-

ficient* of that substance to the blood. The tinctura muriatis ferri is one of the best preparations of iron in dyspepsia or other cases requiring chalybeates; five or six drops given every ten minutes till nausea is excited, often gives almost immediate relief in dysuria, depending on spasmodic stricture of the urethra; as a tonic, the usual dose is from ten drops to twenty-five drops in a glass of water; it is also used as a styptic for cancerous and fungous sores. The ferrum ammoniatum I have never prescribed in India, and believe that it is now seldom ordered.

Dr. Heyne, in his Tracts on India, says, that the native Indians have a variety of ways of preparing iron for medical purposes, and that they are sufficiently well acquainted with its general virtues; he gives an account (see Tracts, pp. 167, 168, 169.) of several preparations of this metal, or what are called in Tamool *cendūrams*, which, excepting that a little sulphur and the juice of one or two plants are employed in making them, appear to differ but little from the *red oxide of iron*, which is now seldom used in Europe, excepting as a pharmaceutical agent, but has, no doubt, the same tonic properties that some of the other preparations possess. The Hindoos believe those *cendūrams* above mentioned as most efficacious in several diseases, particularly what the Tamools term the *ulkachél*, or internal fever; these preparations ought properly to be called *ecrumboo cendurama*, or iron cendurams.

It would require more room than can be here spared to enumerate the different uses of this valuable metal in the arts; it is a principal ingredient in dyeing black; with the aid of sulphate of iron cot-

* See Russel on Scrophula.

ton is dyed of a shamois colour, linen yellow, wool and silk black; it is also employed in preparing common ink, and Berlin blue. The ancients* had certainly the art of making a blue enamel with the aid of iron; and, it would appear that Klaproth, on analysing a piece of antique glass of a sapphire blue, transparent only at the edges, found it contained silex, oxide of iron, alumine, oxide of copper, and lime.

The Hindoos use *eerumboo podie* (iron filings), in conjunction with vinegar and the bark of the *marudum* tree, *terminalia alata* (Kœnig.), for dyeing black; it is also made use of by the chucklers (tanners), together with other ingredients, for giving leather the same colour. The rust of iron (eerumboo tuppoo) as well as the scales (*eerumboo kittum*), and also the dross or refuse (*sittie kull*), are employed by the native Indians for similar purposes. The sulphate of iron (*anna baydie*) they use sometimes in the preparation of black leather.

In addition to what I have already said of *oorukoo* (steel), I shall observe, that Dr. Buchanan (now Hamilton), in his Journey through Mysore, Canara, and Madura (vol. i. p. 151.), mentions, that there are in the district of *Chinnarayandurga*, in Mysore, no less than four forges employed in that manufacture; this excellent writer also tells us, that at *Chinnapatam*, in the same country, steel wire is made for the strings of musical instruments, which is in great request, and sent to the most remote parts of India.

What is commonly called black lead (plumbago), Pennant says, is a produce of Ceylon (vol. i. p. 189.),

* I think Pliny notices this, though I have not been able to light on the passage.

but, it is to be presumed, that it is of a very inferior quality to that of Borradale, in Cumberland; it is a carburet of iron, and is what lead pencils are made of. A counterfeit kind is prepared by the Jews, by mixing the dust of plumbago with gum Arabic, or fusing it with resin or sulphur, and pouring it into the cavities of reeds. The powder of plumbago, with three times its weight of clay and some hair, makes an excellent coating for retorts.

With regard to the use of iron amongst the ancients — there is nothing satisfactory, nay, much room for doubt. The Arab writers (particularly Avicenna) are more explicit, or rather better informed; he says of the rust: "Rubigo ferri vim adstringendi habet;" again: "Vinum in quo ferrum restinctum fuerit, lienosis, stomachico dissolutis ac debilibus auxiliatur." Vide Canon. lib. ii. tract ii. p. 142.

XIV.

LEAD. *Eeeum* ஈயம் (Tam.) *Sheesh* شیش (Duk.) *Sisa* سیسا (Hind.) *Ánúk* انک (Arab.) *Sheeshum* (Tel.) *Surb* سُرب (Pers.) *Temaétam* தமாயிதம் (Mal.) *Sīsaka* सीसक (Sans.) *Plomb* (Fr.) *Blei* (Ger.) *Lood* (Dut.) *Piombo* (It.) *Plomo* (Span.) *Chumbo* (Port.) *Swinez* (Russ.) *Hih-yen* (Chin.)

PLUMBUM.

At *Dessouly* in Higher Hindoostan, about fifty coss East of Sirinagur, there is a lead mine of considerable value, worked by the Rajah. In Lower

India this metal has been found in small quantities, at *Jungumrauzpillay*, in the Cumbem district, in combination with varying proportions of iron, antimony, silver, sulphur, argil, and silex. Dr. Heyne* informs us, that ores of lead have been met with near Cuddapa. In the Sirmor country, as is noticed by the late Captain Rodney Blane in his interesting Memoir of that district, there is a valuable lead mine at Lodi. In Thibet, Captain Turner says, that at a place situated nearly two miles from *Tessoolumbo*, there is a mine of this metal which much resembles some of those in Derbyshire, and in which the lead is mineralized by sulphur; Sir John Malcolm speaks of a lead mine lying a little North of Odeypoor in Malwa. It is a product of Tonquin, and, according to Dr. F. Hamilton†, of Nepaul, where, however, it would appear but two mines are worked, all the metal being reserved for the Rajah's magazines. In Persia, it is found in the neighbourhood‡ of *Yezd*, and amongst the mountains South of Helat in Mekran; and by Mr. Morier's§ account, also at Khalcal, fourteen fursungs distant from *Tabriz*. The greater part, however, of this metal which is brought to India comes from Siam, from Aracan, and occasionally from the Burmah dominions; it is a product of *Oman* in Arabia, whence, Niebhur tells us, much is sent to Muscat for exportation (Travels, vol. ii. p. 365.) Mr. Elphinstone, in his excellent Account of Cabul, says, it is also a product of that country, particularly in the territory of the *Afreeds* and in Upper Bungush.

* See his Tracts on India, p. 315.
† See his Account of Nepaul, p. 78.
‡ See Kinneir's Geographical Memoir of Persia, pp. 40 and 224.
§ See Morier's First Journey to Persia, p. 284.

Lead is found in many parts of Europe, also in some Northern and Eastern * countries. The mines of England are particularly rich; those of Derbyshire alone yield annually about 6000 tons; it is seldom seen native† being chiefly procured in the form of an oxide, called native cerusse, or lead ochre, or lead spar of various colours, red, brown, yellow, green, blueish and black. There are three distinct oxides of lead, the yellow, or massicot, the red, and the brown. Nicholson observes, in his Dictionary of Chemistry, that a native minium was a few years ago discovered by Smithson in Hess. Lead is also found combined with various acids, carbonic, muriatic, phosphoric, chromic, sulphuric, molybdenic; likewise with arsenic acid, forming what is called arseniate of lead. The use of this metal in the arts is well known; it is much employed in glazing porcelain white: it is a principal ingredient in the manufacture of white glass, and the different coloured oxides are valuable pigments, and as such are used by the Hindoos, for particulars respecting which, the reader is referred to another part of this work.

XV.

LEAD, WHITE OXIDE OF, or CERUSSE.

Vullay வெள்ளை also *Moothoo vullay* (Tam.)

* Lead is a product of the Asiatic dominions belonging to Russia, especially in the mines of *Nirtchensk*, near the borders of Chinese Tartary. Sir Alexander Crichton informs me, that a chromate of it is found in several mines near Catherenberg, in the Oural mountains, chiefly at Berizoff.

† Either sulphuretted (in galenas) or combined with antimony.

Suffidah سفيدہ (Duk. Pers. and Hind.) *Asfidāj* اسفيداج (Arab.) *Plomb carbonate* (Fr.) *Bleiweisse* (Ger.) *Cerussa* (It.) *Seebaydoo* (Tel.)

PLUMBI SUBCARBONAS.

XVI.

LEAD, RED OXIDE OF, or MINIUM. *Segapoo sendooerum*, also *Eeum sindoorum* ஈயஞ்செந்தூரம் (Tam.) *Sēndoor* سيندور (Duk.) *Sindur* (Hind.) *Isrenj* اسرنج (Arab.) *Sindūra* सिन्दूर (Sans.) *Yérra sindoorum* (Tel.) تمامبرا *Temamera* (Mal.) *Minium* (Fr.) *Mennig* (Ger.) *Vermillon* (Span.) *Minio* (It.) *Yuen-tan* (Chin.)

OXIDUM PLUMBI RUBRUM.

XVII.

LITHARGE, or SEMI-VITRIFIED OXIDE OF LEAD. *Marudar singhie* மருதார்சிங்கி (Tam.) *Moordár sang* مردار سنگ (Pers. Duk. and Hind.) *Litharge* (Fr.) *Bleiglatte* (Ger.) *Piombo semivitreo* (It.) *Almartago* (Span.)

LITHARGYRUM (Dub.)

Cerusse is occasionally used medicinally by European practitioners in India as an astringent;

with it the Tamools are in the habit of preparing certain *kálímboos* (plasters); the Arabians place it amongst their مسكنات اوجاع (Anodyna.) It is from the subcarbonate of lead, that most of the cases of poisoning* occur, which happen to painters; and also from the base custom of putting it as well as sugar of lead (plumbi superacetas) into wines.†

The red oxide of lead (minium) is an export from Surat, and, according to Elmore, also from China; its medicinal qualities are nearly the same as those of litharge, but it is now rarely used: the modern Arabs place it amongst their *Modumilat-kerough* (Cicatrizantia), and the Hindoos, especially the Bhills, use it commonly in performing some of their religious‡ ceremonies. Litharge is never given internally; like the other preparations of lead it is powerfully astringent. The Mahometans of India occasionally employ it mixed with vinegar to remove pimples from the face and clear the complexion. What is commonly called Goulard's extract (liquor plumbi subacetatis), is a medicine too well known to require particular notice here; it is used externally, and when diluted with water, forms a most valuable application to burns and phlegmon-

* Such afflictions are attended with violent pain in the stomach, vomiting, costiveness, difficult breathing, tremors, and a peculiar hardness and smallness of pulse; they are best combated with cathartics combined with henbane, plentiful mucilaginous dilution, and the warm bath.

† It appears by Marcet's admirable Memoir on the Action of Poisons on Vegetable Substances, that a bean plant was killed in two days by putting its root into a solution of acetite of lead. See Journal of Sciences, Literature, and the Arts, No. xxxix. p. 193.

‡ See Sir John Malcolm's Essay on the Bhills, in the Transactions of the Royal Asiatic Society, vol. i. part i. p. 82.

ous inflammations *; about ʒi. to lb.i. of water; in a still more diluted state it is a useful application in cases of ophthalmia. Sugar of lead (plumbi acetas), taken internally, is very powerfully astringent and sedative in hæmoptysis; dose about half a grain, given every eight or ten hours; as a lotion or colyrium the proportions are from gr. xv. to ℈i. of the salt, to eight or ten ounces of water.

Common galena or lead glance is often found in the bazars of India, and is confounded with the sulphuret of antimony (surmeh). It is apt also to be confounded, Jameson † says, with blende or sulphuret of zinc. Galena is used for glazing pottery; it is abundantly combined with sulphur, and is generally seen in heavy, shining, black or blueish lead-coloured cubical masses. The Romans appear to have got most of their lead from Portugal and Galicia; and to have been perfectly aware of its refrigerent quality, as was Avicenna (Canon. Med. lib. ii. tract ii. p. 273.). Pliny, in his Natural History, book xxxiv. chap. xviii., gives us a formula for the preparation of *psimmithyum* (cerussa), and speaks of its poisonous nature when taken internally; he adds, that the Roman ladies occasionally used it as a kind of cosmetic, for making the complexion fair.

* Mr. Reynard of the "*Societé des Science*" of Lisle, is of opinion, that common sugar might be, with advantage, employed instead of sulphate of soda, to prevent the bad effects of sub-acetate of lead when taken internally. Journal of Science for January, 1824, p. 395.

† See System of Mineralogy, vol. iii. p. 367.

XVIII.

MANGANESE, BLACK OXIDE OF. *Manganese* (Fr.) *Braunstein* (Ger.) *Manganese* (It.) MANGANESIUM.

This metal, it is to be presumed, is not common in India; Captain Arthur, however, informed me that he had found it in Mysore, massive in an indurated reddish-brown ochre, combined with oxide of iron; and it would appear that the black oxide is a product of Ceylon *; of all the ores of manganese, this alone has been introduced into the Materia Medica. It appears to have been first particularly noticed † by Boyle, about the beginning of the fourteenth century, but was considered as an iron ore, till the separate experiments of Scheele and Bergman, in 1774, proved it to be an oxide of a peculiar metal, which Gahn afterwards succeeded in obtaining in its metallic state. The greater part of the black oxide that is used in England, is found near Exeter in Devonshire, in Cornwall, and at Howth near Dublin. There is this singularity in manganese, that in its metallic state, it has been found capable of depriving a small portion of iron of its magnetism; but the effect ceases as soon as the metal is converted into oxide. The white oxide, or protoxide is imperfect,

* See Dr. Davy's Account of that island.

† I say particularly noticed by Boyle, for I think there is no doubt that the ancients were acquainted with it, though they confounded it with the magnet; and Pliny, in more parts than one, remarks, that the magnet was employed in making glass: this could have been nothing else than manganese. See Beckman's History of Inventions, vol. iv. p. 59.

and is soluble in acids; the black or per-oxide, which abounds as a natural product, is altogether insoluble; it is found in Devonshire and Aberdeenshire, also in Somersetshire. Manganese does not combine with sulphur, but Mr. Brande* tells us, that a compound of oxide of manganese and sulphur is found in Transylvania and Cornwall. Manganese melts readily with most metals, always excepting mercury, which it rejects.

Manganese has rarely, if ever, † yet been discovered in its metallic state; but its ores are found in most of the countries of Europe. The only medical ‡ use of the black oxide of manganese in England is for procuring oxygen gas, and for fumigating in cases of infection; for the mode of preparing the gas, the reader is referred to Dr. Thomson's excellent account, in his London Dispensatory. § For the manner of destroying infection by means of fumigating, the gentleman just named instructs us to take common salt ʒiv., oxide of manganese in powder ʒi., sulphuric acid ʒi., and water ʒij., mix the acid and water well together, and then pour the mixture over the other ingredients in a China basin, which should be placed in a pipkin of hot sand. The doors and windows of the room to be fumigated, must be closely shut for two hours after the charged basin has been placed in it; then thrown open, and a current of air allowed to pass through the room.

* See his Manual of Chemistry, vol. ii. p. 108.

† A Frenchman of the name of Peirouse is said to have found it in its native state in the county of Foix. See Beckman's History of Inventions, vol. iv. p. 68.

‡ In speaking of manganese, Alibert says, "Depuis que la medicine s'est appropriæ la manganese, elle en a fait des applications *utiles* au traitement de la teigne, des dartes," &c. See his "Nouveaux Elémens et de Matiere Medicale," vol. ii. p. 276.

§ Edition for 1822.

The native peroxide of manganese is much used in the arts in Europe, such as in making the common bottle gass, and when added in excess it gives to glass a fine red or violet colour; it has also been discovered to yield a fine brown colour, used for painting porcelain. Of late years it has been employed in composing the finest kind of crystal-glass *; and in forming flint-glass. In the labaratory it is considered as by far the cheapest material † from which to procure oxygen gas; and is largely employed in modern times in the preparation of chlorine, especially by the bleachers. See more on this subject in another part of this work. The best manganese is supposed to be that of Piedmont and Perigord in Guyenne.

XIX.

MERCURY. *Rasam* ரஸம் (Tam.) *Rasam* (Tel.) *Pāráh* پارہ (Duk. and Hind.) *Abuk* ابق (Arab.) also *Zibākh* (Arab.) *Seemāb* سیماب (Pers.) *Pará* (Hindooie). *Rāssā* രാസം (Mal.) *Sūtam* सूतं also *Rasa* रस and *Pārada* पारद (Sans.) *Mercure* (Fr.) *Quicksilber* (Ger.) *Mercurio* (It.) *Azogue* (Span.) *Shwuy-yin* (Chin.)

HYDRARGYRUM.

We are informed by Captain Turner, that, at Tessoolumbo, in Thibet, cinnaber is found, which contains much quicksilver; and I perceive by that

* See Smith's School of Arts, vol. i. p. 210.
† See Jameson's Mineralogy, vol. iii. p. 324.

valuable little volume, entitled, "*Remarks on the Internal Husbandry and Commerce of Bengal,*" that mercury thus mineralized may be considered as one of the export articles of trade from India; the greater part of this metal, however, which is exposed for sale in India, is brought from Japan*, where it is procured, both in its native state and combined with sulphur (cinnaber)†; in which last form it would appear also, by Dr. F. Hamilton's account, to be sometimes met with in Guzerat, and has there got the Hindoostanie name of شنگرف *shengérf;* the same author informs us, that it is found in its native state in Nepaul, where it is called *sabita.*

It is from native cinnaber that the greater part of the mercury of commerce is obtained; this is found in many parts of Europe: amongst the most productive mines, are those of Idria, Carinthia, and at Wolfstein and Morsfeld in the Palatinate; but, perhaps, after those of Idria, the richest mercury mines at present in a state of activity, are those of Almadin, near Cordova, in Spain; though they have been worked upwards of two thousand years. In the Idria mines of Germany, virgin or pure mercury is often procured in considerable quantity; the quantity in 1663, when Dr. Pope visited them, was about 14,862 lbs. annually.

Factitious cinnaber, or red sulphuret of mercury (hydrargyrum sulphuretum rubrum) may be obtained from the black sulphuret‡, by heating it red hot in a flask, when a grey sublimate is procured; which,

* Where, it would appear, that it is also found combined with silver, forming what is termed *solid amalgam;* the festes amalgam of Werner.

† See Abbé Rochan's Voyage to Madagascar and the East Indies, pp. 365, 366.

‡ Or Ethiop's mineral, a name, however, now little used.

when reduced to powder, assumes a red colour, and is called cinnaber. See Brande's Manual of Chemistry, vol. ii. p. 255. This has been considered as alterative and deobstruent, and at one time was much used in rheumatic affections, leprous cases, and also in worm cases; it is the *surur ahmar* صرور احمر of the Arabians, but it is now chiefly employed in fumigating in old venereal complaints; the dose when given internally, is from grs. viii. to ℈i., in the form of a bolus or electuary. The cinnaber of commerce, or vermillion, a compound of about 8 parts of mercury with one of sulphur, is manufactured to great extent in Holland as a pigment*; and a curious and particular account of the mode of preparing it, may be found in the "Annales de Chimie" livre i. p. 196. The Hindoostanie name of factitious cinnaber is *durdar* دردار, in Arabic it is sometimes named *zunjefer* زنجفر, in Tamool it is *enghilicum*, in Dukhanie *paak shéngherf* پاک شنگرف, in Persian *shéngherf* شنگرف, in Hindooie *ingoor*, in Sanscrit *inghoolum*, in Malay *sedilengam*; it is also not unfrequently called by the Tamools *shadilingum*. It is an export from Surat to Madras, also from China † and Batavia ‡; the Hindoos § know how to prepare it in a coarse manner, and consider it as antispasmodic! and also as a valuable remedy for cutaneous affections, and for fumigating, in such cases of the venereal disease as are attended with ulcers in the nose, mouth, or throat.

Mercury, which is well known to be much, and most

* See Imison's Science and Art, vol. ii. p. 471., also Brande's Manual of Chemistry, vol. ii. p. 255.

† See Elmore's Guide to the Indian Trade.

‡ See Oriental Repertory, vol. i. p. 88.

§ See Fleming's Catalogue of Indian Medicinal Plants and Drugs, article *Shengherf*, p. 51.

successfully used in India, is there chiefly employed in the following forms: calomel (hydrargyri submurias), the mercurial pill (pilulæ hydrargyri), corrosive sublimate (hydrargiri oxymurias), and the ointment.

The use of mercury in venereal complaints, has now been persevered in for upwards of three * hundred years; and although there have of late been doubts entertained with regard to the absolute necessity of it, in such maladies; nay, those who affirm that they can cure the constitutional disease by other and simpler means; I own that I have not been made a convert to this new doctrine, nor shall give up the favorable opinion I have formed of it, after a nearly forty years' experience, notwithstanding all that has been brought forward against it. Much has been said of the *modus operandi* of mercury in syphilis; but perhaps nothing more judicious has been given to the world on that subject, than the following notion of the celebrated Hunter; that the stimulant operation of this metal, induces an action incompatible with the morbid action of the venereal virus, until the poison is either destroyed or evacuated from the body by the excretions; but whatever may be the principle on which it operates, as Dr. Thomson observes, "its efficacy is certain when judiciously† and cautiously administered." It has appeared to me, that after

* Berengarius Jacobus, a surgeon at Carpo, was the first who cured the venereal disease by means of mercurial ointment; he died in 1527.

† I know of no failure of a complete cure of syphilis, in India, when the medicine in question was timely resorted to and given with skill, and when the patient lived and managed himself as directed; but I have known infinite mischief produced by delay, carelessness, inattention to diet during the course; these are but too often followed by racking night-pains, nodes, ulcers, and all the rest of the horrid train of anomalous symptoms, which I need not enumerate here.

long continued courses of mercury in India, (and they are often, I fear, too long,) blood drawn is not only more fluent, but much darker * coloured than it appears to be when taken from a person in health; if this position is just, it becomes a question, whether or not this power of liquifying, or partially breaking down the blood, may not extend to the other fluids and secretions of the human body; and so account for, from the use of this medicine, the removal of various glandular and other obstructions, to which the frame is subject, whether buboes, liver affections, tumours of the joints from rheumatism †, &c.; and of this we are certain, that in those painful and, I am sorry to say, frequent hepatic derangements (to be met with in all climates), and which are particularly distinguished by a dark-coloured, viscid and offensive smelling bile, and a long train of dyspeptic and nervous symptoms, no sooner has the mercury testified its alterative effect on the habit by bringing on a slight soreness of the mouth, than the bile, if examined, will be found to have assumed its proper healthy rhubarb-like appearance and consistence, with that peculiar smell it only has, when secreted by a liver no longer diseased; while the extraventicular digestion will also be observed to go on with its former vigour, and the stomach by sympathy partake of the happy amend-

* I perceive the same power of rendering the blood dark coloured was observed in mercury by Cirillo, a physician of Naples. See Alibert's "Nouveaux Elémens de Thérapeutique," vol. ii. p. 268.

† Of the wonderful efficacy of mercury in acute rheumatism I have no longer any doubt; it was but lately I saw a delicate female who had been brought to the verge of the grave by bleeding, purging, and the use of diaphoretics, in this complaint, without the smallest advantage, relieved from all her sufferings the moment her mouth became a little affected from the use of the blue pill cautiously administered.

ment. How the more fluent and darker colour of the blood may be induced by the use of mercury, it is for chemistry to explain; the bright-red colour has been supposed by some to be owing to the iron* it contains; the red globules having been found to consist of a fibrous gluten, and that metal; now we know that mercury forms no amalgam with iron, though it does with gold, copper, zinc, bismuth, and lead, &c. †

It is well known that the Eastern nations were the first who employed mercury‡ in the cure of some of their obstinate cutaneous and leprous affections; and it may be questioned, whether the natives of India were before the Arabians, or only second in order, in availing themselves of the virtues of that powerful mineral. We are told by Le Clerc, in his "Histoire de la Medicine" (pp. 771. 791.), that, according to Fallopius, the first physicians in Europe who made use of mercury in venereal cases, lived towards the end of the fifteenth century; and that they were induced to make trial of it from what they had read of its efficacy in scabies and leprous cases, in the writings of Rhazes §, Avicenna ‖, and Mesue. The first lived about eight hundred years ago; the second died in 1036; and the last, we are told, pub-

* The experiments of the celebrated Rhades show that from twenty-five pounds of blood from the human body, nearly two drachms of the oxide of iron were obtained. See Hooper's Medical Dictionary.

† See Brande's Manual of Chemistry, vol. ii. p. 260.

‡ See a valuable paper on the leprosy of the Hindoos, by H. H. Wilson, Esq., in the Transactions of the Medical and Physical Society of Calcutta, vol. i. p. 1.

§ "Argentum vivum cum extinguitur ardens est; quod scabiei auxilium affert." Vide Rhaz. de Re Med. lib. iii. cap. xxiv.

‖ "Argentum vivum extinctum adversus pediculos et lendes cum rosaceo oleo valet." Vide Avicen. Canon. Med. lib. ii. tract ii p. 119.

lished in the twelfth century (though I perceive that Moore, in his History of the Small-pox, says, Mesue lived towards the end of the eighth* century, and beginning of the ninth); and we know that Almenar, a Spaniard, published on it, in 1516.†

Calomel is well known to be most efficacious in liver complaints, in India, and especially in what is called acute hepatitis; but it is not to be prescribed until the more violent inflammatory symptoms have been mitigated by bleeding, blistering, purging, and low diet; it is apt occasionally to open the body too much; in such cases, the admixture of a very small quantity of camphor may be necessary, but certainly not more than a grain, or, at most, two grains in the course of the twenty-four hours. Laudanum or opium in complaints of this nature is often deceitful. I have observed, that calomel is less likely to purge when prescribed in small divided doses during the day, than in a full one at bed time. I commonly gave a grain and a half, or at most two grains, three times in the day, rubbing in ʒi. or ʒij. of mercurial ointment, once in the twenty-four hours, on any part of the body where the skin was soft and free from hair. As soon as the mouth gets properly touched‡ with the medicine, the pain and uneasiness in the side will be found to abate, so that its further continuance must be regulated with caution. In all

* But the fact is, there would appear to have been two individuals of the name of Mesue, probably of the same family. The one who has the greatest claim to our notice, is said to have flourished in the tenth century, to have professed the Christian religion, though a native of Bagdat, he practised at Cairo.

† We learn from Morrison's excellent Chinese Dictionary, that it is not exactly known when mercury was first given, internally, in China; but that in A. D. 745, it was termed in that country *puh-sze-che-yo*, or elixir of life.

‡ And this is our surest pledge that mercury is to do good.

cases where offending bile is to be worked off, or where it may be required to excite a new action, calomel is an excellent remedy, mixed, as occasion may require, with other medicines, aloes, jalap, rhubarb, colocynth, &c. It is no place here to enter into a minute investigation respecting the *causes* of diseases; and, no doubt, there has been great difference of opinion concerning those which occasion inflammation of the liver. This much may be safely said, that the stimulus of heat (particularly a dry heat, such, for example, as characterizes the climate of the Coromandel coast, where liver affections are more common than in Bengal or in Malabar), too full and improper diet, and imprudent potations, have a great share in bringing on the mischief; nor can it be questioned but that a viscid and badly prepared bile, producing obstruction and irritation, is a more immediate source of evil; and so constantly does neglected constipation precede an attack of hepatitis, that we cannot for a moment deny, but that it must powerfully contribute towards hurrying on the organic derangement by binding up what should daily be carried off. How calomel may be supposed to do good under such circumstances, I think may be conceived from what has been above stated regarding the *modus operandi* of mercury on the human frame; viz. by inducing a new action incompatible with the existing evil; but, perhaps, more directly by rendering that bile *more* fluent and natural, which had become viscid and depraved; so the most likely of all things to produce disease by obstruction, stimulated as the liver is at the same time by inordinate heat, and thereby secreting a larger quantity of bile than usual, but which is too thick to flow easily through the various ducts.

With regard to the proximate causes of hepatitis much has been said by different authors. Winslow ascribed both the acute and chronic to an inflamed state of the ramifications of the venæ portæ, which, in his opinion, constitute the seat of the disease. Saunders, and Dr. Good thinks with some plausibility, suspects the acute variety to be owing to an inflammatory state of the hepatic artery, and the chronic to a like state of the venæ portæ (Study of Medicine, vol. ii. p. 388.).

When the membranes of the liver are attacked with inflammation, the pain and fever are infinitely more severe than when the substance of that organ is the seat of the disease. Indeed, I have known instances in which it appeared after death, that almost the whole of the parenchyma was converted into pus, though but little pain of any consequence had preceded. The pain stretching up to the top of the right shoulder more especially marks the acute disease; when the inflammation is on the convex surface of the liver the patient lies with most ease on his right side; while, on the other hand, if the concave side is affected, he lies with greater comfort to himself on the left. The acute disease will, invariably, end in suppuration, by which part of the parenchyma of the organ will be destroyed if a stop is not put to the inflammation by bleeding, blistering, and purging, and a subsequent use of mercury. A tumour forming near the edge of the liver, or towards the concave surface, points externally, and can easily be opened, and the patient by this means saved. If the abscess forms on the convex surface, it will point towards the cavity of the thorax, frequently corroding through the diaphragm. I have known several cases in which the inferior lobe of

the lungs having contracted an adhesion with those parts of the diaphragm connected with the abscess, the matter was discharged by the bronchiæ; but it more usually happens that the pus is diffused into the cavity of the thorax, and so forms a kind of purulent empyema; when the tumour forms adhesions with the stomach, or colon, the matter is consequently poured into them, and is either vomited up or passed by stool.

There is a variety of hepatic derangement which is extremely insidious, and is either a sequel of the acute disease, unskilfully treated, or a consequence of general torpor and languid circulation in the organ in question; in the latter instance frequently attacking delicate women of sedentary habits. It is usually accompanied with one or more of the following derangements: obstructions and slight indurations of the liver itself, or in some of the ducts; chronic dysentery; partial feverish symptoms; dyspepsia; great irregularity of the bowels, from vitiated or scantily prepared bile; dejection of spirits; mental irritability; and, if the sufferer be a female, irregularity of the menstrual discharge. This malady requires much nicety in the treatment; mercury must be used with infinite caution, cool air sought, and whatever is likely to invigorate the frame without over-stimulating: in such affections calomel, by its cathartic quality, is not so much to be trusted to as the blue pill, an excellent addition to which is ipecacuanha; two or three grains of the blue pill mass, with two grains of ipecacuanha, made into two pills, may be taken in the course of the twenty-four hours. Corrosive sublimate is, generally speaking, not a favourite medicine in India; its virtues in syphilis are doubtful; in cutaneous complaints it is

considered as more efficacious, but in every instance it sickens and irritates more or less. The Arabs, by Forskahl's account (Mat. Med. Arab.), employ it often, and call it سولیمانی *soleimanie*. The best mode of administering it is in the form of a pill, mixed with some grateful aromatic. I have noticed the good effects produced by a judicious use of mercury in certain cutaneous diseases, in hepatitis, syphilis, and rheumatism; but there are many other maladies in which it has been found highly useful; such as dysentery*, croup, hydrocephalus, the bilious remittent fever of hot climates, in which the remission is of too short duration to expect much advantage from the bark; dyspepsia†, when its cause can be traced, which it often may, to a vitiated bile; hypochondriasis, when it is a consequence of the same derangement; and melancholy, in which the fluid in question is almost invariably dark-coloured, viscid, and offen-

* How many instances have I known in India of patients being saved by the use of mercury (ointment) in dysentery! The very moment almost that the mouth became affected the frequency and tenesmus ceased. A similar salutary result from the use of mercury in dysentery is noticed by Dr. James Johnston, in his valuable work on the Influence of Tropical Climates, p. 220.

† This variety of dyspepsia must not be confounded with some others of that complaint, such as that in which the stomach is affected by diminished nervous influence, or through sympathy with the head, to which there may be an over-determination of blood, ending, sometimes, in mental derangement; nor with that disease of the stomach consequent of scirrhus in the organ itself. The dyspepsia in which mercury does good is that in which the bile is either too scanty in quantity, or of bad colour or consistence, and which is often characterised by great flatulence about three or four hours after eating; in such cases, a pill, composed of grs. iiss. of the blue pill, and as much compound extract of colocynth, taken at bed time, and continued for fifteen or twenty days together, will be found of the greatest advantage. Dyspepsia, distinguished by peculiar acidity, is best combated by antacids and strict attention to diet. By Prout's experiments the free acid in the stomach has been ascertained to be the muriatic.

sive, requiring correction in both colour and consistence.

The diseases in which I am of opinion mercury may do harm, in India, are, generally speaking, those which are termed nervous, whose causes are to be traced rather to the brain than the liver; mental derangement, excepting that variety of melancholy distinguished by a black bile, is invariably rendered worse by the use of mercury*; and I think it is sufficiently evident that epilepsy and palsy are to be treated by other means than mercury, if we expect to render the sufferers any relief. So is this mineral also contraindicated in all those deviations from sound health, when either matter is formed in some part of the body, or in which a solution of continuity is evidently approaching; and equally so in those commonly termed cachectic†, provided always they cannot be traced to hepatic derangement. After suppuration has taken place in hepatitis mercury will not affect the mouth.

I mentioned above the advantage that might be expected from the use of mercury in the bilious remittent fever of India; if, however, this disease has, by mismanagement, not been arrested in its career, but suffered to pass into the typhoid type, we must no longer look to mercury for a cure; the time for its employment with success is then gone by; the

* Which appears to me to rarify or make more fluent the circulating fluids, and may have a somewhat analogous effect, perhaps, on the animal spirits, thereby bringing on flightiness of manner and irregular excitement, the but too common consequences of long-protracted and injudicious courses of mercury in hot climates!

† In the scurvy it is known to be a perfect poison; the danger from its use in such cases I perceive noticed by Alibert, in his "Nouveaux Elémens de Thérapeutique," vol. ii. p. 268.

reaction, the excitability of the frame, as Brown would have said, has been overcome by the violence of the fever; and the sufferer, whose body is no longer capable of being made to assume a new action, must be supported and sustained through the depression, by bark, the mineral acids diluted, or, what is better, the juice of ripe oranges* or pomegranates, or death will inevitably ensue. The preparation of bark I have found the best suited in such cases, is the strong decoction, with a portion of the fine powder added to it; taking care to open the bowels every evening by means of an enema, and, if necessary, to keep up the vis vitæ by the application of repeated small blisters to the upper part of the foot or inside the ancle; but I, in some instances, could do little good when oranges were not plentifully supplied.

Calomel I have found of the greatest service in putting a stop to the feverish attacks which children are subject to in India; one grain, two or three, according to the age of the patient, may be given over night, and worked off with a little rhubarb and magnesia, or castor-oil, in the morning, and repeated if necessary. With respect to the use of mercury in scrophula, it is a subject on which much has been written, and more said: one fact I have sufficiently established, and that is, that, in this malady, salivation does harm. If the mineral is given at all it must be with great caution, as a gentle stimulant and alterative, and soon followed by sea-bathing and the use of iron, both of which I have found to be most efficacious in affections of this nature; the latter,

* Which the patient swallows with remarkable avidity, and which is, perhaps, the most powerful of all antiseptics.

perhaps, acting by giving to the blood that portion of iron in which it is found to be defective.* The preparation I have found best suited to the stomachs of scrophulous patients is the tinctura ferri ammoniati; the dose from ♏ viii. to ♏ xxxv., twice or thrice in the twenty-four hours, in a glass of water.

Cancer is a disease of rare occurrence in India; in its early stages I have found mercury of use, but when an altered organization had taken place, it appeared rather to do harm: the sub-muriate is the best preparation in such cases. The *yercum pawl* (milky juice of the asclepias gigantea dried) I am strongly inclined to believe might be useful in such affections: see article *Yercum Vayr* in this volume; it is the *mudar* of Upper India. Neither does this active mineral ever seem to have done much good in consumption; nay, Dr. Cullen doubted whether or not it did not do harm†; but, alas! what does much good in this distressing complaint? I have, in more instances than one, arrested the progress of the malady in its early stage by means of the blue pill, but the effects were not lasting.

After all that I have said in favour of mercury, in India, and I advance it with great submission to higher authorities, I must enter a caution against its indiscriminate use; and certainly would object to the very large‡ doses now given equally in England

* See Russel on Scrophula.

† See Practice of Physic, vol. ii. sect. dccccvii.

‡ This is, I know, at variance with the opinions of some late and very intelligent writers, such as Mr. R. W. Bamfield, who, in his Practical Treatise on Tropical Dysentery, recommends scruple doses of calomel night and morning. I have found in hepatitis a repetition of smaller doses more certainly beneficial; for instance, grs. ij. given at most thrice in the twenty-four hours. With regard to dysentery, I would object to mercury in any quantity being given internally, unless, perhaps, a *little* of the blue

and in India* ever being introduced into general practice. In cases requiring *simply* cathartics, that is to say, unattended with much fever, or any positive visceral affection, why have recourse to this powerful, but debilitating metal? Surely, we have abundance of excellent purgatives, where merely evacuation and not change of habit is required; medicines which do not nauseate nor exert their influence beyond the first passages. The great tendency to the skin in a tropical country, seems to render it there more difficult to affect the system with mercury than in colder climes; I was, on that account, in the habit of advising those *who could do it with convenience* to remove, during the time they were using it, to some cool situation.†

I cannot conclude what I have to say of the use of mercury as an internal remedy, in India, without expressing more fully a notion regarding it, which

---

pill in conjunction with ipecacuanha; in that disease I trusted more to the strong mercurial ointment, and so saved the bowels from irritation. My notions of calomel are also in opposition to those of Mr. Corbyn, who informs us, that calomel, in doses of from grs. v. to grs. x., excites *lassitude*, sickness, irritation, and, on account of its being a *stimulant*, acts as a good purgative; but that in doses of from grs. xv. to grs. xx. it is a *sedative!* allays vomiting, removes spasm, sends the patient to sleep, and produces one or two *motions*; in this way he found it of advantage in the spasmodic cholera. See Reports on the Epidemic Cholera, published at Bombay, in 1819, Appendix, p. 3.

* Much has been said on the use of calomel, in India, in cases of cholera morbus; and on that subject I was led to give my opinion fully in my observations on the cholera morbus of India (pp. 64 and 65.); I can only here add, that whatever hopes may have been at one time expected from this mineral, in that malady, it in too many instances has failed to allow us to speak of it with encomium, and has often been discovered, after death, in the stomach, where it had proved quite inert.

† For instance; if in the Carnatic, that the patient should proceed to the Mysore country, or to the delightful and cool valley of Courtālam, in the Tinnively district.

has been already hinted at. I have oftener than once observed, that the supervention of one disease has caused the immediate disappearance of another: dysentery I have known effectually removed by the coming on of intermittent fever; rheumatism by an attack of dysentery; epilepsy by epidemic fever; and one remarkable instance of an officer who had not fewer than seven spreading scrophulous ulcers in different parts of his body, which had long baffled my best endeavours to heal, and who, from particular circumstances, having been obliged to sleep amongst the mountains of the Ganjam Circar, for two nights together, got the endemic fever of the district, which, after the third paroxysm, had so completely the effect of changing his habit, that before the end of the eighth day from the time that the fever first seized him, every sore on his body was healed up, nor ever again returned, as far as I could learn. Now the query is, whether, without being led to look farther for the *modus operandi* of mercury, we might not say, that it acts by bringing on a new affection, and so conquering the morbid action we may have been called to subdue.*

* See Ferrier's excellent Treatise on the Conversion of Diseases, a work which contains sentiments and facts, perhaps, but too little attended to, and which have ever appeared to me to adduce many excellent hints for medical treatment. Reasoning from what he has advanced, for instance, might we not be induced, on some occasions, to try what could be done by exposing the patient to a new but more tractable morbid action, with a view of combating what may have baffled our best endeavours to overcome. It will not be denied that the great object of the practice of physic is to produce, with the least possible delay, so great a change in the state of the human frame, that the existing ailment may be checked, and another excitement superinduced in its room. To ensure this happy effect various modes have been had recourse to, so that the question simply becomes, how can it be best accomplished? Of the wonderful virtues of mercury, in

The preparations of mercury, used externally, which are chiefly resorted to in India by European practitioners are the following: 1. The *white precipitate* (hydrargyrum præcipitatum album), employed in the form of an ointment in some of the most obstinate cutaneous complaints. 2. The red precipitate (oxydum hydrargyri rubrum, per acidum nitricum), used in the form of a fine powder, for destroying *fungus* or cleaning chancres; also, when mixed intimately with fine sugar, in the proportion of grs. ss. of the oxide to grs. iv. of sugar, for removing specks on the cornea blown into the eye; or,

---

occasioning a revulsion in many maladies, I can bear full testimony; antimony, galvanism, brisk purging, copious and repeated bleeding, have all had their strenuous advocates; against the last powerful agent it may look almost like petty treason to say a word in these days, yet this much I shall venture to affirm; that (however useful, nay, absolutely necessary, it may be to bleed freely in some acute, inflammatory, organic affections, and in cases of severe falls and contusions), by the large abstraction of the vital fluid I have known many a fine constitution most seriously injured for life; the blushing roses blighted on the cheek of youth; the muscles rendered flaccid, the tone of the stomach impaired; nay, I have but too often remarked, that it was ever those who had been *most* frequently bled in early life that were *most* apt to sink into dropsy and paralysis in their more advanced age. Dr. Morgan, of Walthamstow, suggests the bringing on of syncope, as expeditiously as possible, as a remedy in some obstinate disorders, such as the cholera morbus of India; and this, he says, can be done at once by removing the pressure of the atmospheric air from the thigh and limb of one side, by means of an air pump: the notion is new and ingenious, and certainly worth the experiment. My proposed method of combating the same complaint is by means of galvanism, from a supposition that all the symptoms of the disease are consequent of a temporary diminished quantum of the galvanic fluid in the frame of the sufferer; the vomiting I conceive to be occasioned altogether by a morbid acidity of a peculiar nature, brought on by the reduced nervous energy, and most likely to be relieved by antacids (magnesia) and the use of calf's bile, taken internally; the natural bile being ever observed to be wanting in the evacuations in such attacks; when it does flow it is salutary.

made into an ointment with lard, it is prescribed as an application to ulcerations of the eye-lids and to chancres. 3. The *grey oxide of mercury* (hydrargyri oxydum cinereum) I have found, from experience, to be most valuable for fumigating, especially in such cases of venereal ulcers as have become sphacelous, when it acts like a charm; the fumes directed to the parts affected. 4. The *milder ointment of nitrate of mercury* (unguentum nitratis hydrargyri mitius), the chief use of which, when moderately diluted, is as a local remedy in herpes and tinea capitis, but more especially in psoropthalmia, ulcerations of the tarsi, and in the purulent ophthalmia of infants; it is what used to be called *unguentum* citrinum, though that name, perhaps, more properly belonged to the stronger ointment of nitrate of mercury.

For some account of the preparations of mercury in use amongst the Hindoos, the reader is referred to the second part of this work; articles *Rassum*, *Rassapuspum*, *Rassacarpoorum*, *Shadilingum*, *Shavirum*, and *Rassa sindoorum*. The diseases in which mercury in various forms is had recourse to in India by the Hindoos, are anasarca (neer covay), ascites (maghodrum), apoplexy (assadi sennie), the venereal disease (maygha veeadie), and leprosy (koostum). See Tamool Sastrums, Aghastier Pernool, and Aghastier Ayrite Anyouroo.

The ancients considered mercury, used internally, as a poison, at least in the time of Pliny the elder it was so reckoned (Nat. Hist. book xxxiii. chap. 8.); though it would appear that Galen, who wrote about a hundred years after, and flourished in the reigns of M. Aurelius, Commodus, Lucius, and Severus, began

to think more favourably of it. He would seem like Theophrastus, to have turned his attention particularly to minerals and metallic substances; he went to Lemnos, to see the famous Lemnian earth; he reviewed the metallic substances of Cyprus, and brought to Rome many valuable drugs from the mineral kingdom; nor did he leave unexplored the vegetable kingdom; he made a journey to Palestine, to make experiments on the opobalsamum, and directed the attention of his countrymen, to a great variety of medicinal plants. See Eloy's Dict. Hist.

The uses of mercury in the arts, are many, and highly valuable; such as in constructing thermometers and barometers; in preparing amalgams of gold and silver for the purposes of gilding (in gilding steel or iron, however, which has no affinity for mercury, it is necessary to employ an agent to dispose the surface to receive the gilding; for this purpose a solution of mercury in the nitrous acid is applied to the parts intended to be gilded; when the acid by a stronger affinity seizes a portion of the iron, and deposites in the place of it, a thin coating of mercury, which will not refuse a union afterwards with the gold amalgam).* Other uses are, in making what is called a *quickening water* for gilding; for taking off the gold from gilt-silver tankards; for silvering looking-glasses; for preparing an amalgam in conjunction with tin, lead, and bismuth, for quicksilvering the inside of glass globes; for silvering the convex-side of meniscus glasses for mirrors; for preparing that amalgam in combination with tin and zinc, and formed into a paste with hog's-lard, which

* See Imison's Elements of Science and Art, vol. ii. p. 376.

has been found the best suited for anointing the cushions of electrifying machines, &c.

What is called Howard's fulminating preparation of mercury, as having been discovered by him, is made by dissolving by heat 100 grains of mercury, in an ounce and a half of nitrous acid; this solution being poured cold into two ounces by measure of alcohol in a glass vessel, heat must be then applied till effervescence is excited; a white vapour undulates on the surface, and a powder is gradually precipitated; which, when well washed and dried, is the powder in question: it detonates by gentle heat or slight friction.

We are told by Dr. Paris, in his excellent work*, that with the exception of Peruvian bark, he knows no medicine so often adulterated as mercury; its impurity is seen by its dull aspect; by its tarnishing, and becoming covered with a grey film; by its diminished mobility; it is commonly adulterated by lead, bismuth, zinc, and tin.

There is, I think, no doubt, but that what Pliny calls *minium*, and which was brought to Rome from Spain, was no other than the *native cinnaber* † of the modern authors; he observes, that the Greeks termed it *miltos*, and that some named it cinnaberi, an appellation, however, which we find was also sometimes bestowed on *dragon's blood*, a circumstance which often led to much confusion; the minium (cinnaber), the Romans also occasionally called *secundarum* or secondary vermillion, and were in the habit of pre-

* Pharmacologia, pp. 394, 395.

† The Κιννάβαρις of Dioscorides, which some others suppose corresponds with our cinnaber, Dierbach seems to be of opinion was no other than the sanguis draconis. See Dierbach's Materia Medica of Hippocrates, chap. iv.

paring, by means of fire, what they termed artificial quicksilver or hydrargyrum from it, which in nothing differed from our quicksilver. As a medicine used internally, Pliny cautions us against it as a poison, but adds, and I consider the fact as extremely curious, nor am I aware that it has been before noticed, "*unless indeed it is to be administered in the form of an unction on the belly, when it will stay bloody flux.*" Now whether the ancients carried the use of this remedy so far as to produce ptyalism, is a question we, alas! cannot now solve. See Plin. Nat. Hist. book xxxiii. chap. 8. The same author mentions the use of quicksilver amongst his countrymen in gilding. In the seventh chapter of the same book, we are told this interesting circumstance, that according to Theophrastus, Callas, the Athenian, about 249 years after the foundation of Rome, was the first, who, trying to procure gold by means of fire, from a red sandy earth, obtained by chance the first real cinnaber. By the same author's account it would appear, that native mercury was got in his time from the same mines in Spain that yielded silver; chap. vi.

For various and interesting particulars regarding the use of mercury amongst the Hindoos, the reader may consult a celebrated Tamool Sastrum, entitled *Concananirar Nool*, a work on the preparations of mercury, and other powerful minerals; also, one entitled *Boganinar Terumuntrum*, which treats of the different preparations of mercury, &c. In Sanscrit there are many works on the same subject; the most celebrated are *Rasarutna Samoochayem, Rasa Sarum, and Rasa Rutnacarum*, in which may be seen many curious, and, certainly, a few extraordinary

notions, respecting the metals, precious stones, sorcery, brimstone, &c. In Ceylon, there are several very interesting Sanscrit works on the Materia Medica, written in the Cyngalese character, though sometimes in *Pali;* of the last, the books entitled *Manjusa* and *Yogapitaké*, are most remarkable. The *Bhaishajjă Măni Mālāwă* consisting of 1166 stanzas, and the *Sătă Slōkă* are in Sanscrit, but in the Cyngalese character. Of modern Persian medical books, in which mercury may be found mentioned, the best appear to be the various writings of Secunder, especially that called قرابدين سكندري Krabadinie* Secundrie; the author's name is Secunder Ben Ismâel; he is said to have been a native of Constantinople, and was at one time physician to the Nabob of Arcot, to whom he dedicated one of his works قانون سكندري, in 1747.†

With regard to the Arabic works in which this metal is mentioned; the reader will find it fully noticed in a book entitled قانون في الطب *Kanooni Fi Altib* (Canon. Med. lib. ii. tract ii. p. 119.).

* Since writing the article mercury, I have read Mr. J. Annesley's valuable work on the Effects of Calomel; also Dr. S. A. Cartwright's Essay on Syphilis. I have now too little room left here to say much more on this subject; and shall, therefore, reserve any further sentiments I may have to offer till I have occasion to speak of mercury in that chapter of this work which contains the "Formulæ."

† I am happy to say, that we have got four volumes of the writings of this author in the library of the Royal Asiatic Society.

XX.

SILVER. *Vellie* வெள்ளை (Tam.) *Rūpā* روپا (Duk. and Hind.) *Nokra* نقرہ (Pers.) *Fazzeh* فضہ (Arab.) *Vendie* (Tel.) *Perāk* പെരാക് (Mal.) *Peddie* (Cyng.) *Rajata* रजत and *Rúpya* रूप्य (Sans.) *Argent* (Fr.) *Silber* (Ger.) *Argento* (It.) *Plata* (Span.) *Yin* (Chin.)

ARGENTUM.

Silver occurs in trifling quantities in Upper Hindoostan. In Lower India, I have been informed that Mr. W. Mainwaring found it in its native state in the Madura district, associated with zinc, sulphur, iron, fluoric acid, silica, and water, forming a yellow blende, perhaps somewhat similar to that to be met with at *Ratieborziz* in Bohemia. Captain Arthur was the first who discovered this metal in small quantities in Mysore, both in its native state, in thin plates, adhering to some specimens of gold crystallized in minute cubes, and mineralized with sulphur, iron, and earthy matter; forming a kind of brittle, sulphurated silver ore, not unlike what is found in the district of Freyberg, in Saxony, and in Siberia. On the island of Banca there are silver mines, but the sultan has a great objection to their being worked. There are silver mines in the kingdom of *Ava**; it is an export in ingots from Cochin-China. We also know, that this valuable metal is a product of *Siam*†,

* See Symes's Embassy to Ava, vol. ii. p. 374.
† See Oriental Repertory, vol. i. p. 119.

(from which country it is brought to India,) as well as of *Manilla* *, *Thibet* †, Japan ‡, Tonquin, and *Java*. § Kinneir informs us, that it is found in *Armenia*, and in the provinces of *Mazanderaun* and *Kermaun* in Persia. ‖ The richest silver mines of the Russian dominions are those of *Schlangenberg*, in the government of Culivan. What is called the *Sysee silver of China* ¶, found in the mines of *Honan*, is of the finest quality, five per cent better than dollars; it is got in irregular pieces, but can only be taken from the country by smuggling.

Dr. Heyne, in his Tracts on India (pp. 315, 316.), tells us, that in the *Nellore* and *Callestry* districts, on the Coromandel coast, a galena of lead, rich in silver, was found some few years ago; and he adds, that the same ore has also been discovered eight miles north of *Cuddapah*; the mine I believe had been formerly worked by order of Tippoo Sultan, but abandoned because not sufficiently productive. It would appear, that the ore had been lately analyzed in Bengal, and found to contain eleven per cent of silver!

Native silver is rarely got altogether pure, but

* See Oriental Repertory, p. 88.

† See Turner's Embassy to the Teshoo Lama, p. 370.

‡ See Tavernier's Indian Travels, part ii. book ii. chap. xxiii.

§ At Pondang, in that island.

‖ Frazer, in his Journey to Khorasan, informs us, that silver is found in a mountain called Altoun Taugh, in the Southern district of Bockara.

¶ We are told by Du Halde, in his History of China, that there are silver mines in that country, in the province of *Houquang*, near the city of *Hengtcheou-fou* (see work, vol. i. p. 213. English edition); and by Morier, in his Journey through Persia, &c., that there are silver mines at Keeban, about eight days' journey from Tocat, in that part of Asiatic Turkey called Rumiyah (see work, p. 344.).

generally contains small portions of other metals, such as metallic antimony with an occasional trace of copper and arsenic; *auriferous native silver* is found at *Konigsberg*, in Norway (discovered in 1623), at *Bauris* in Salsburgh, and in Siberia at *Schlangenberg*; it contains by Jameson's account 72 parts of silver and 28 of gold! One of the most frequent ores of silver is what is called the compact silver glance, also vitreous silver ore, and sometimes compact sulphureted silver ore; the constituent parts of which (obtained at Himmelfurst) were 85 of silver and 15 of sulphur; it is found in many parts of Europe; in Asia, I believe, only at Schlangenberg, in Siberia.

The most valuable silver mines are well known to be those of Mexico and Peru, which far exceed in value the whole of the European * and Asiatic mines; we are told by Baron Humboldt, that in the space of three years they afforded not less than 316,023,883 lbs. troy of pure silver.†

* In those of Konigsberg, in Norway, however, according to Dr. Clarke, in his Travels in Sweden, the metal is sometimes found in immense masses; one of which, he tells us, kept in the museum of Copenhagen, measures six feet in length, and, at one part, eighteen inches in diameter. From the mines of Konigsberg about one hundred and thirty thousand dollars are annually coined.

† The mines of *Mexico*, or New Spain, are considered as richer in silver than those of *La Plata* (Peruvian); and the mines of *Guanaxuato* are infinitely richer than those of *Potosi*. More than three-fourths of the silver obtained in America is extricated by means of quick-silver; the loss of which in the process is immense. For interesting particulars respecting the "actual state of the MEXICAN mines," the reader is referred to Sir William Adams's pamphlet on that subject; he speaks highly of that of Valenciana, which, he says, in one year, 1791, yielded as much silver as was produced by the whole kingdom of Peru; nay, it would appear, from late accounts, that the same mine is now actually producing ore which is worth 5000*l.* weekly: this I should be much inclined to doubt.

The only preparation of this metal used in medicine, is the nitrate of silver (argenti nitras); it is the strongest and most manageable caustic known. Boerhaave gave it in dropsies; it has been prescribed as an antispasmodic and tonic, in cases of epilepsy, chorea, and angina pectoris, in doses of an eighth of a grain, gradually increasing the dose to three or four grains, and is given in the form of a pill with the crumb of bread: in too large doses it is a poison, and is ranked as such by Orfila; the antidote for which, he tells us, is common salt. I perceive, by Dr. Thomson's London Dispensatory, that, according to *Hahnemann*, a solution of the nitrate in 1000 parts of water, is recommended as an application to old sores, and for healing the ulcers of the mouth brought on by the use of mercurials. Nitrate of silver, taken internally, and persevered in for some time, gives a singular darkness to the colour of the skin; which often remains a long time after its disuse. See Dr. Good's *Study of Medicine*, vol. iii. p. 547. It does not appear from Mr. Brande's account, that any certain means have yet been discovered of preventing this discolouration.* See Manual of Pharmacy.

The nitrate of silver is occasionally prepared in India, by some of the more enlightened Mahometan practitioners, but in a clumsy way; and, I believe, but do not give it with perfect confidence, that some mention is made of it in a Persian medical work, entitled *Krābadinie Cadéry* قرابدين قادري, which is an extensive treatise on pharmacy, written by *Mohammed Akbar Arzany*, physician to the emperor Au-

* The reader will find this appearance of the rete mucosum particularly described by Dr. Bradely, in the Transactions of the Medico-Chirurgical Society, vol. ix. p. 234.

rungzebe, to whom it is dedicated. The opinions of the Hindoos, respecting silver, may be seen in a Tamool sastrum, named *Kylasa Chintāmani Vādanool*, which treats of the art of making nine metals into strong powders; also of arsenic, &c. &c.

The Romans appear, according to Pliny *, to have got most of their silver from Spain, and we find, that author expresses his wonder, "that those mines of the metal, which were first worked in the days of Hannibal, should still retain the names given to them by those Carthaginians who first discovered them, and, brought them to light; such as that of *Bebelo*, so called in the days of Pliny;" it yielded to Hannibal three hundred pounds weight of silver daily.

The uses of silver in the arts are many and valuable. For curious and interesting accounts of silvering in all its modes, the reader is referred to *Smith's School of Arts*, and *Nicholson's Dictionary of Chemistry, with its application to the arts.* The silversmiths of Upper India appear to be well acquainted with the art of silvering; they also make silver-plate admirably, and can prepare the leaf, which the Tamools call *villie reck;* in Hindoostanie it is روپی ورق (*rupie* wurk); in Tellingoo *venie rekoo*, and in Sanscrit *rupie dullum.* It is much employed by the *moochiemen* in ornamenting pictures, images, fans, &c. †

What is called *fulminating silver*, was discovered by Berthollet (Annales de Chimie, tom. i.), and is obtained by dissolving oxide of silver in ammonia; when a small quantity of liquid ammonia is poured

* See Pliny's Natural History, book xxxiii. chap. vi.

† My friend Dr. C. Wilkins informs me, that in the higher provinces silver-wire is made as fine as a hair; this can be flattened into lamina, it is then covered with a silken thread for embroidering muslins.

on the oxide, a portion is dissolved, and a black powder remains; this is the fulminating compound, which explodes on being gently heated (see Brande's Manual of Chemistry, vol. ii. p. 269.); but this powder is not to be confounded with the *detonating silver* of Descotils, which is obtained by dissolving silver in the pure nitric acid, and pouring into the solution while it is going on, a sufficient quantity of rectified alcohol; for further particulars respecting the process, the reader is referred to Ure's excellent Dictionary of Chemistry, article Silver; I shall merely here add, that the powder, when well prepared, is white and crystalline, and that heat, a blow, or long continued friction, causes it to inflame with a brisk detonation.

To conclude, I may observe, that in speaking of the description of rocks in which native silver and gold are most frequently found in different parts of the world, Baron Humboldt says, "If the great argentiferous and auriferous deposits that have formed for ages the wealth of Hungary and Transylvania, are found solely * in syenites and porphyritic green-stones, we must not thence conclude that it is the same in New Spain. The *veta negra* of *Sombrerete*, which traverses a compact lime-stone, has furnished the example of the greatest abundance of silver which has been observed in the two worlds. The mine of *Valenciana* is worked in transition slate; and in the central part of New Spain, where porphyries are frequent, it is *not* that rock which affords

* This, however, does not hold good in some other countries of Europe; for instance, we know that in Saxony, and Bohemia, and Norway, native silver occurs in gnesis and mica slate; in Ireland and Saxony in clay slate; and in Suabia in granite. See Jameson's Mineralogy, vol. iii. p. 45.

the precious metals, in the three great workings of *Guanaxuato*, *Zacatecas*, and *Catorce*; the miners there work on metalliferous mineral deposits, almost entirely in intermediary formations of *clay-slate*, *grauwacke* and *alpine lime-stone*. In fact the more we advance in the study of the constitution of the globe in different climates, the more we are convinced, that there scarcely exists one rock anterior to *alpine lime-stone*, which has not been found in some countries extremely argentiferous." See Humboldt's Geognostical Essay, on the Superposition of Rocks, in both Hemispheres.

XXI.

TIN. *Tagarum* தகரம் (Tam.) *Rungá* رنگا (Duk. and Hindooie). *Urzeez* ارزیز (Pers.) *Timã* تيما (Mal.) also ثالاغ (Mal.) *Trapu* त्रपु and *Ranga* रंग (Sans.) *Kulai* قلعي (Hind.) *Resãs* رصاص (Arab.) *Etain* (Fr.) *Zinn* (Ger.) *Tin* (Dut.) *Estano* (Span.) *Stagno* (It.) *Olowo* (Russ.) *Galai* (Turk.) *Yang-seih* (Chinese).

STANNUM.

I do not believe that tin has been hitherto found in any part of our Indian dominions, strictly so called; it is a product of the East coast of Sumatra, and of the Malay peninsula, including consequently Siam and Pegu; but not to the Northward of 10° of North latitude, nor to the Southward of 6°. The places whence it is chiefly brought to India as an article of commerce, are, Queda, Junk-Ceylon,

Tavāi * in Lower Siam †, and the islands of *Lingin* and *Banca* ‡: the tin mines of the last mentioned country are extremely rich, and are worked by the Chinese; from these mines, Mr. Elmore tells us, in his "*Guide to the Indian Trade*" (p. 20.), are annually exported, not less than from forty to sixty thousand peculs of tin; and it appears, by a valuable memoir on the subject of this metal in Eastern countries, to be seen in the Asiatic Journal for Jan. 1820, that at the two islands last mentioned, it is sold cheaper than at either Prio or Pera, or indeed any part of the Malay peninsula; and that must be cheap indeed, as the tin of the last-mentioned country, we know, is sold at Queda for about 48*l.* per ton, and sells in China for 80*l.* per ton. There are those who believe, that the tin mines of Banca are comparatively a recent discovery, about the year 1710, as is stated by Captain Hamilton §, who was in India at the time of the discovery; but how can this be reconciled with the facts, that the native Indian ships were found laden with tin, in the first voyages of the Portuguese, and that it was carried to China by the Arabs in the ninth century.

The tin ore of Banca, is the common tin ore or tin-stone of mineralogists, and is usually of a reddish-brown colour; "superior in value," Mr. Crawfurd in-

* See Franklin's Tracts on the Dominions of Ava, p. 64.

† We are told in the Oriental Herald for February, 1824, that tin, in Siam, is diffused over more extensive geographical limits than in any other part of the world; and for productiveness the mines of Junk-Ceylon are considered as next to those of Banca. Eight thousand peculs, or about five hundred tons, are sent annually to the capital from the mines of Junk-Ceylon.

‡ The island of Banca lies betwixt Sumatra and Borneo, from the first of which it is separated by a narrow channel; it is in longitude 106° 5′, and latitude 2° 35′ 8″.

§ See *New Account of the East Indies*, vol. ii. p. 120.

forms us, to block tin*, twenty-two and a quarter per cent. The Cornish tin is obtained with vast labour, by mining through obdurate granite, often to the prodigious depth of many hundred fathoms. Banca tin, on the other hand, by digging through a stratum of sand and clay; and seldom to more than three or four fathoms in depth. "To clear the Cornish mines from water, the most expensive and complex machinery is requisite; to clear those of Banca†, a simple wooden wheel, costing a few shillings!" We learn from Kinneir's Geographical Memoir of Persia, that tin is found in that country, amongst the mountains South of Helat, in the province of Mekran (p. 224.); and I was informed by the late Mr. W. Petrie of Madras, that there is a tin mine at Penang; it would also seem, by Barrow's account, to be a product of Tonquin. Tin, there is not a doubt, is found in some part of the Russian dominions, but Sir Alexander Crichton says, that it has not yet been discovered from what exact spot.

The tin of Banca finds its way to almost every part of the world; but China, and the continent of India, are its principal markets.

The *tin-stone* ore, above noticed, is combined with oxide of iron and silex. Another species of oxidized tin, is what is called *wood-tin*; its constituent parts, according to Jameson, being, oxide of tin 91 parts, and oxide of iron 9 parts. I am not aware, that it has as yet been found in Asia; it occurs at St. Columb, St. Roach, and St. Denis in Cornwall; it is one of the commonest tin ores of Mexico. Tin, in

* A name vulgarly given to iron and tin combined.

† The produce of the Banca mines, when they were wrought to the greatest advantage, was nearly the same in numerical amount with the highest produce of those of Cornwall. Crawfurd's Indian Archipelago, vol. iii. p. 466.

its metallic state, has been hitherto found only in Cornwall, in the form of what is called *tin pyrites*, and often associated with ores of copper and blende.

The pulvis stanni I have known some of the Mahometan doctors acquainted with as a medicine. It is considered as anthelmintic, and acts chiefly mechanically, given in doses of ʒi. or ʒij. mixed with treacle or honey, for two or three successive mornings, and a brisk cathartic afterwards administered. Dr. Good mentions a case of tape-worm thirty-eight yards long, having been expelled from the anus by a dose of tin filings and jalap; ʒij. of the former and ʒss. of the latter, mixed with honey (Study of Medicine, vol. i. p. 299.).

The various uses of tin in the arts in Europe, are too well known to require being particularly noticed here. Some of the chief are, in tinning different metals, such as iron and copper. Iron when tinned in a particular manner, forms *fer blanc*. Pins are *whitened*, or, improperly speaking, what are called *silvered*, by boiling them with tin filings and tartar. Hollow mirrors or globes are silvered by an amalgam, consisting of one part by weight of bismuth, half a part of lead, the same quantity of pure tin, and two parts of mercury. Tin is much used for making domestic utensils, and in the process of enamelling.‡ There are various kinds of *pewter*; the most valuable is that made with 17 parts of antimony and 100* of tin; to this the French add a little copper: Mr. Parkinson† proposes the addition of a little lead. The oxide of tin, vulgarly called *putty*, is generally used for polishing mirrors, lenses, and for rendering

* See Nicholson's Dictionary of Chemistry.
† See Parkinson's *Memoranda Chemica*, p. 169.
‡ To make the *white* enamels.

glass white and opaque, converting it into enamel. This must not be confounded with the *putty* of glaziers, which is prepared by kneading powdered chalk with linseed oil.

The oxide of tin is used in dyeing, as a mordant, especially for the purpose of heightening scarlet and madder red; and the murio-sulphat of this metal has been found to be a useful addition to give a deeper hue to yellow, in dyeing silk of that colour with the quercitron bark. The *aurum musivum* is a combination of tin and sulphur, much used by the japanners, also as a pigment for giving a golden colour to small statues or plaster figures; it is likewise mixed with melted glass to imitate lapis lazuli. Wallevious *supposed* tuttenag was a compound of two parts of tin with one of bismuth. Tin is also, we know, employed in the composition of a valuable kind of earthenware.

Mr. Beckman, in his *History of Inventions*, seems to be of opinion, that the *stannum* of the ancients, and cassiteron of the Greeks, was altogether different from our tin, and that it was no other than the regulus of lead, or *werk* of the Germans. Now, on perusing Pliny's Natural History on this article (book xxxiv. and chap. xvii.), I find no reason at all to concur with that gentleman; on the contrary, Pliny, after telling us very plainly the use of tin, viz. for lining brass or copper utensils, partly to take away the disagreeable taste which such vessels have, and partly to preserve them from rust, adds, that "*in these days tin is often found counterfeit, by adding to white lead a third part of white brass;*" he also mentions another device for counterfeiting tin, viz. "*by mixing together white and black lead in equal*

proportions," and so forming what was in his time termed, *argentine lead!*

Some account of tin may be found in a Persian medical work, entitled قانون در علم طب *Kanoon der Alimi Tib*, also, I believe, in a Sanscrit work called *Rasa Sārum*, which treats of the principles of nine metals, and their compounds; but I have met with no Hindoo medical practitioner that seemed to be aware of the virtues of the powder in worm cases; nor have I in my possession any Tamool prescription (and I have many) that contains tin.

XXII.

ZINC. *Tootoonāgum* துத்தநாகம் (Tam.) *Sungbusrie* سنگبصري (Duk.) *Zinc* (Fr.) *Zink* (Ger.) *Zinco* (It.) *Pi-yuen* (Chin.)

Zincum.

Mr. Mainwaring discovered zinc in the Madura district, in Southern India, some years ago, combined with sulphur and iron, forming what is called *blende;* but whether it was the yellow, the brown, or the black, I cannot say. Dr. F. Hamilton found zinc in Nepaul, and there called *dasta.** But by far the greater part of this metal which is met with in India, is brought from Cochin-China or China, where both the calamine and blende are common; it is from the last, however, which is a sulphuret, that this metal is usually obtained for commerce, and is

* See his Account of Nepaul, p. 76.

then called *spelter.** The metal may be procured pure " by dissolving this zinc of commerce (spelter) in diluted sulphuric acid, and immersing a plate of zinc for some hours in the solution, which is then filtered, decomposed by carbonate of potassa, and the precipitate ignited with charcoal in an iron pot" (Brande's Manual of Chemistry, vol. ii. p. 133.). It would appear, that though the process of extracting zinc from its ores had long been known in China, it was not so in Europe before the year 1721, when *Henke* pointed out a method of extracting it from its ores; and Dr. Thomson informs us, in his Dispensatory, that *Von Swab* first obtained it by distillation in 1742. Now-a-days, the mode of extracting zinc from its ore is sufficiently well understood, as well in Derbyshire as in many other parts of Europe.

Zinc, oxidized in the ore, called *red zinc ore* †, has hitherto only been got in North America. Oxidized in the common calamine ‡, its constituent parts are varying proportions of oxide of zinc and carbonic acid; this is found in several parts of England, but, I believe, in greatest abundance in Derbyshire; on the continent it is got in Carinthia, Hungary, Silesia, &c. Calamine is an article of the British Materia Medica, but it must first be prepared, forming then what is called *calamina præparata*, and is used in making certain collyria; also, in dry powder, it is applied, with success, to excoriations, ichorous ulcers, and superficial inflammations; it is *calamine preparé*

* This spelter, or impure zinc, is employed by the braziers in soldering.

† Consisting of 76 parts of zinc, 16 of oxygen, and 8 of oxides of magnesia and iron.

‡ Of this there are two varieties, the one a true carbonate of zinc, the other a compound of oxide of zinc and silica.

(Fr.); *galmei* (Ger.); *kalmei* (Dutch); *galmija* and *calamina* (Ital. and Span.). Calamine, in its *impure state*, is well known to the Hindoos, who term it *mádál tootum* (Tam.) and *dusta* (Hind.). The Mahometans of India call it *kull-kubrie* كل كبريت; they employ it for nearly the same purposes that the prepared article is used in Europe.

What is commonly called *tutty* is the *impure oxide of zinc*, which the French call *tutie*, the Germans *tutia*, the Italians *tuzia*, and the Spaniards *atutia;* it is supposed to be an artificial compound of the sublimed oxide of zinc, that collects in the chimneys of the furnaces in which the ores of this metal are roasted, mixed with clay and water, and baked. Dr. Hooper considers the name *tutia* as a Persian word, and that the article was known to the ancients under the name of *pompholyx*. I am strongly led to believe, whatever confusion may have been introduced by their want of scientific arrangement, and by their many vague terms and synonymes, that the ancients knew much more than we are aware of regarding many mineral substances; and in the present instance, I am inclined to think, that, perhaps, *spodos*, and not *pompholyx*, was the word which they bestowed on the *impure oxide of zinc*. It appears that it only got the name of pompholyx after having undergone a certain preparation, which rendered it not only much *whiter*, but lighter* than the *spodos;* in fact, a something which I fancy corresponded very nearly with our *flowers of zinc*, or

* In book xxxiv. chap. xii. Pliny gives an account of the preparation of *pompholix*, which, he says, is *exceedingly light*, and rises with the smoke of the smiddie, and is only to be distinguished from soot by its extreme *whiteness*. Now this must lead us to suppose, that *pompholix* actually was the same as the *lana philosophica* and *flores zinci* of the early chemists.

zinci oxydum of the London Dispensatory. So am I also of opinion, however indefinitely he applies the word *cadmia*, that by it Pliny meant our calamine stone, and that with it and copper the Romans made some of their most highly-prized brass images (see chapters iv., v., and vi. of the same book and work); and all this may have been done without their considering zinc, as we now do, a distinct metal: with them *cadmia* was a most useful stone, and as such they employed it.

The oxide of zinc has been considered, by European practitioners, as tonic and antispasmodic; and has been, according to Gaubius, employed with success in chorea; he gave it the name of *cadmia*. Dr. Good†, however, does not speak so highly of its virtues; though he thinks its antispasmodic properties may be greatly increased by adding to a full dose of it a full dose of ammoniated copper. Dr. Duncan gave it with success in epilepsy (Commentaries, iii. p. 216.).

I do not find that the Mahometan practitioners of India employ zinc in any form. The Hindoos, or rather the Tamools, call it, as already noticed, *tootánāgum*, and prepare with it a kind of *flowers of zinc*, which they term *tootenagum passpum*, in the following manner: "Zinc is to be fused in an earthen pot, some green leaves of the euphorbia nereifolia (*elékūllie*) being thrown into the melted mass, which is constantly stirred with an iron spoon; it inflames in the usual manner, leaving ashes, which are kept in the fire till they acquire a splendid white colour; only the finest parts of these are preserved for medical use, and are separated from the

† See Study of Medicine, vol. iii. pp. 440, 441.

rest by sifting through a piece of fine muslin" (see Heyne's Tracts on India, p. 166.). This *tootenaga passpum*, the gentleman just quoted tells us, is employed by the native practitioners with the greatest confidence (and I consider the fact as curious), in the following diseases: gonorrhœa virulenta (*meghorogam*), in debility from nocturnal pollutions, in fluor albus (*kusum arogam*), and the hæmorrhoids (*argerogam*).

The white vitriol, or sulphate of zinc, is in Tamool, *vulley tootum*, in Dukhanie, *suffaid toota* سفيد توتة, in Tellingoo, *tootum*, and in Sanscrit *caburnie*.

The Hindoos and Mahometans of India seem only to know it through their connexion with Europeans. In very small doses, that is from one to two grains, it has been employed, given twice a day, as a useful tonic in epilepsy*, intermittent fever, fluor albus, chorea, and pertussis. Dr. Pearson says, that in doses of five or six grains he has found it a useful emetic, evacuating the stomach without weakening it. When immediate vomiting was required I have given it to the extent of ℈i. with success: we all know its value in preparing collyria, to be used after vascular congestion has been removed.

The use of zinc in the arts is chiefly in the fabrication of *brass* and other gold-coloured mixtures, and in making *bronze*, which is done by fusing together tin, copper, and zinc. The lately discovered malleability of zinc, at a temperature of 300° of Fahrenheit, has, no doubt, greatly enhanced its value; the inconvenience arising from its brittleness thus being removed, the metal is now applied to many of

* See Brande's Manual of Pharmacy, in which he says, that in diseases attended with considerable irritability the sulphate of zinc appears preferable to sulphate of iron.

the purposes for which copper had been hitherto used (Jameson's Mineralogy, vol. iii. p. 418.). The same author tells us, that the oxide of zinc has of late been recommended as a substitute for white lead; as a pigment it is not liable to change, and is not subject to those deleterious consequences so frequently attendant on preparations of lead. Zinc detonates strongly if mixed with nitrate of potash and thrown into an ignited crucible. Gold, silver, platina, and nickel, are rendered brittle* by it; but with bismuth and lead it enters into no combination in fusing. Of all known bodies, except manganese, zinc unites the most readily with oxygen; it takes it from almost every other body, which renders it useful in detecting the most trifling quantities of oxygen: hence zinc acts with great rapidity on all the *acids*. I shall conclude what I have to say of this article by observing that zinc inflames in oxy-muriatic gas, and is a most powerful conductor of galvanism.

Such are the metals and metallic substances which I have found in India and other Eastern countries, in use amongst the natives and European inhabitants; there are, no doubt, others, but any inquiry regarding them would have been foreign to my pursuit, which is confined merely to such articles as are known to have some tangible intrinsic value, whether in medicine, the arts, agriculture, or horticulture.

* See Parkinson's Memoranda Chemica, p. 173.

CHAPTER III.

FORMULÆ, WITH PRACTICAL OBSERVATIONS.

See Article I. page 2.

DILUTED SULPHURIC ACID—*Acidum Sulphuricum Dilutum.*

Prepared by mixing a fluid ounce and a half of the sulphuric acid with fourteen fluid ounces of distilled water. It is a tonic, a restorative, and is given with success in protracted venereal affections, in India, when the constitution has been weakened by long courses of mercury: dose from ten to thirty minims.

℞ Acidi sulphurici diluti - ♏x.
Infusi rosæ - - - f℥iss.

Misce. This may be taken two or three times during the day.

℞ Acidi sulphurici diluti - f℥ij.
Tincturæ cinchonæ compositæ f℥ij.

Misce. Of this one or two tea-spoonsful may be taken twice in the twenty-four hours, in a glass of water, to restrain colliquative sweats. Dr. A. T. Thomson tells us, in his London Dispensatory, that in malignant erysipelas, with a tendency to hæmorrhagy, the diluted sulphuric acid has been given to the quantity of f℥i. in twenty-four hours.

See Article II. p. 2.

DILUTED NITRIC ACID — *Acidum Nitricum Dilutum.*

Prepared by mixing together a fluid ounce of nitric acid with nine fluid ounces of distilled water: dose from ten minims to forty in any bitter infusion or in distilled water.

℞	Acidi nitrici diluti - -	f ʒij.
	Aquæ distillatæ - -	f ℥xxvi.
	Syrupi - - -	f ℥ij.

Misce. Of this three or four ounces may be taken for a dose in typhus fever; or, as a tonic, to alternate with mercury, in venereal affections attended with obstinate anomalous symptoms; or it may be prescribed as a useful adjunct to bark in typhus fever.

℞	Decocti cinchonæ - -	f ʒxii.
	Tincturæ ejusdem - -	f ʒi.
	Acidi nitrici - - -	♏ix.
	Syrupi aurantii - -	f ʒi.

Misce. Fiat haustus.

Diluted nitric acid is sometimes used, in India, to act as a blister in cases of cholera morbus; and with it is prepared, occasionally, a bath, as recommended by Dr. Scott in chronic hepatitis: in making this bath* the acid must be added to the water till it is

*The bath recommended by Dr. Scott was for the feet and legs, which he ordered to be kept in the acid mixture for half an hour or more at a time, and to be continued for a fortnight if found beneficial; it would appear to stimulate the liver and keep the bowels open: but in two instances, in which I marked its effects, it rendered both individuals peculiarly nervous, amounting almost to hysteria!

about the sourness of vinegar. Dr. Thomson recommends for fœtid ulcers a lotion made with f℥ij. of the acid and Oj. of water. A few drops of diluted sulphuric acid added to sulphate of quinine, previously to its being mixed with water, seems to have the effect of increasing its tonic properties.

See Article III. p. 4.

DILUTED MURIATIC ACID — *Acidum Muriaticum Dilutum.*

Prepared by mixing together a pound each, by weight, of muriatic acid and distilled water: dose from fifteen minims to f℥i. in any bitter infusion. Mr. Brande says (Manual of Pharmacy, p. 200.), that, as a tonic, this acid is not preferable to the sulphuric; he gives us the following gargle as serviceable in malignant sore throat:

℞ Acidi muriatici	- -	f℥ss.
Decocti cinchonæ,		
Infusi rosæ, comp. āā	-	f℥iiiss.
Mellis rosæ - -	-	f℥i.

Misce. Fiat gargarisma.

This acid, in the state of gas, is employed often, with advantage, for neutralizing putrid miasmata and destroying infection in sick rooms; disengaged by pouring sulphuric acid on common salt. The muriatic acid does not appear to have any positive antisyphilitic virtues, and is but little employed in any way in India.

See Article V. p. 6.

ALMOND — *Amygdalus Communis* (Lin.).

℞ Olei amygdalæ dulc.	- -	f ʒi.
Syrupi tolutani	- - -	f ʒi.
Aquæ distillatæ	- -	f ʒvi.
Liquoris potassæ subcarbonatis, q. s.		

Fiat emulsio. A table-spoonful to be taken two or three times in the day, when cough is troublesome, and inflammatory symptoms abated. The bitter almonds contain less fixed oil than the sweet; but there can be obtained from them, by distillation, an oil which is virulently active, in fact, destructive to animal life*; taken in the small quantity of one drachm.

See Article VI. p. 8.

ALOES — *Aloes Extractum* (Edin.).

Aloes is seldom prescribed by itself; but is one of the best of all the stomachic aperients in India, given alone or in conjunction with bitter extracts.

℞ Aloes spicati	- - -	ϑss.
Pulveris rhei	- - -	ʒss.
Extracti gentian.	- -	ϑi.
Syrupi simplicis, q. s.		

Misce, et divide in pilulas xx. Two of these may

* See an excellent Treatise on Prussic Acid, by Dr. Granville (p. 89.). See also the papers of the very able and scientific Mr. Brodie, in the Philosophical Transactions. If Prussic acid should have been taken so as to endanger life, Mr. Stowe recommends an emetic, without delay, and then to rouse the energies of the system by means of oil of turpentine, brandy, or ammonia. This acid has a strong odour of bitter almonds; it is soluble in alcohol, and may be precipitated from its solution by *nitrate of silver*.

be taken twice in the twenty-four hours, in slowness of the bowels consequent of dyspepsia.

The extract of the common aloes (*Barbadoes aloes*) is more active than that of the spiked aloes.

In dyspepsia, with much flatulence, consequent of liver derangement, I have found the following most useful:

℞ Pilulæ aloes compos.,
Pilulæ hydrargyri, āā - grs. xxv.
Syrupi zingiberis, q. s.

Misce, et divide in pilulas x. One to be taken every night at bed time, and continued for fifteen or twenty days; or the compound extract of colocynth pill may be used in the same quantity, in place of the aloes.

℞ Aloes spicati - - - ʒiss.
Lact. nov. vaccin. - - - f ʒviij.

Tere simul, ut fiat enema, tepidum injiciendum; in suppression of the menses or to expel ascarides. The pilulæ aloes et assafœtidæ are useful in flatulence and dyspepsia; dose grs. x. twice daily. The pilulæ aloes cum myrrha are excellent for opening the bowels in chlorosis; dose from grs. viii. to grs. xv. twice daily.

℞ Pulveris aloes composit. - ℈ij.
Pulveris antimonial. - - ℈j.
Syrupi simplicis, q. s.

Misce, fiat massa, et divide in pilulas xvi. Two may be taken every night as a sudorific laxative.

℞ Pilulæ aloet. (Edin.) - grs. xii.
Calomel - - - - grs. v.
Syrupi simplicis, q. s.

Misce, et divide in pilulas iv. The whole to be

taken at bed-time to purge of bile, when the stomach is easily sickened; or they may be made with the pilul. aloes composit. (Lond.)

℞ Vini aloes - - - f℥iiss.
Spiritus ammon. aromat. - f℥ss.

A table spoonful may be taken, or a little more, when necessary, to open the bowels in cases of nervous weakness.*

See Article VII. p. 11.

ALUM—*Alumen.*

This is used as an astringent and tonic in hæmorrhages and gleets. For the first a powder has been found useful, consisting of alum grs. x., kino grs. v., and repeated twice or thrice daily. For the latter, pills composed of alum grs. v. or vi., compound powder of cinnamon grs. vi., and extract of gentian, grs. vi. made into four pills for a dose, and repeated if found to do good. Dr. Pearson recommended alum-whey for gleets, prepared by boiling together a pint of cow's milk and ʒij. of alum till *coagulum* takes place, then strain off the whey, dose ℥ij. The *alumen ustum* (Dub.) is a useful escharotic, and is much used in India by the Hindoos in cases of ophthalmia; or a collyrium may be made by dissolving grs. vii. or viii. of alum in f℥iv. or f℥v. of rose-water. A useful gargle, in cases of relaxed uvula, is made with alum ʒiss., decoction of cinchona f℥xii., and f℥iss. or f℥ij. of honey. Dr. Scudamore, in his Essay on Blood (p. 155.), says, that a saturated solution of alum is an efficacious styptic.

* The decoctum aloes compositum I have found to be a valuable aperient in hypochondriasis, in the quantity of f℥vi. given twice daily, with an equal quantity of the compound infusion of gentian, and ϑss. of the subcarbonate of potass.

See Article VIII. p. 14.

AMBER — *Succinum.*

M. Wilson, in his Pharmacopœia Chirurgica, informs us, that the oleum succini cum opio is a useful medicine applied to the face in cases of *tic douloureux*. The oil, in doses of from six to fifteen drops, has been given as an antispasmodic and stimulant in hysteria and epilepsy, combined with water by means of mucilage, but it is not very efficacious. Brande notices the following as recommended to be rubbed on the chest in hooping-cough: spiritus camph., tinctur. opii, olei succini āā f℥ss. Fiat linimentum.

See Article X. p. 17.

ANISE SEED — *Anisi Semen.*

A mixture made with oil of anise xii. minims, white sugar ʒi., tincture of ginger f ʒij., and f ℥vi. or f ℥vii. of peppermint water, is a good carminative; the dose three table-spoonsful: or one or two drachms of the spirit of anise, *spiritus anisi* (Lond.), may be given for the same purpose, made by macerating for twenty-four hours half a pound of bruised anise seed in a gallon of proof spirit.

See Article XII. p. 20.

ASSAFŒTIDA — *Assafœtida.*

In cases of what are called nervous head-ache I have known much relief given, in India, from pills composed of assafœtida ʒi., aloes grs. v., syrup of ginger q. s., made into fifteen pills, three or four of

which may be taken at bed time. Dr. Miller gave the following, with success, in hooping-cough:

℞ Assafœtid. - - - ʒss.
Aq. ammon. acetat. - - f ʒss.
Aq. pulegii - - - f ʒiij.

Misce. One or two table-spoonsful to be taken every hour.

As an emmenagogue from grs. x. to ℈i. of the pilulæ galbani compositæ (Lond.), made into pills, may be taken at bed-time. Ten grains of the pilulæ aloes et assafœtidæ (Edin.), made into two pills, and taken twice daily, are useful in dyspepsia with flatulence.

℞ Mistur. assafœt. - - ʒvss.
Spir. lavend. comp. - - ʒss.
—— ammon. arom. - - ʒij
Misce, sumat æger ter quotidie cochlearia tria.

This I have found extremely useful, in India, in nervous sinkings in delicate females. For relieving the pains of cholic an injection may be used made with assafœt. ʒiiss. and ʒx. of barley-water. In epilepsy, one may be employed prepared with tinctur. assafœt. ʒss., tinct. opii f ʒi., decoct. avenæ f ʒxii. The Hindoos take assafœtida in large doses, also mix it with their food to prevent flatulence.

See Article XIV. p. 23.

ASARABACCA — *Asarum Europœum* (Lin.).

Little employed in India. An errhine prepared with the powder of the dried leaves (asari folia) and the powder of the white hellebore root (veratri radix), of each ℈i., has been recommended in cephalæa and lethargic affections; a little snuffed up the

nose, occasionally, till a copious discharge from the nostrils comes on.

See Article XX. p. 32.

BEEF TEA — *Carnis Bubulæ Infusum.*

Best prepared by putting a pound of the lean part of beef, cut into very thin slices, into a quart of water, and boiling it over a quick fire for ten minutes, taking off the scum; afterwards, pouring off the clear liquor for use, add a little mace, and boil the whole for five minutes longer. Veal broth (jus vitulinum) is more nourishing, without heating.

See Article XXI. p. 33.

BENZOIC ACID — *Acidum Benzoicum.*

Of this (the flores benzoes of the old Pharmacopœias), from grs. v. to ℈i. or more have been given in chronic asthma, as an antispasmodic, but it does not appear to be very efficacious. The tinctura camphoræ composita, into which it enters, is more useful in the same disease in doses of f℥iij.

See Article XXVI. p. 44.

BORAX — *Sub Boras Sodæ.*

℞ Boracis pulveris	- - -	ʒi.
Mellis despumat.	- - -	℥i.

Misce. A little to be applied frequently to the parts affected, in the thrush. A good gargle for the mouth, when the patient is under the influence of mercury, is prepared with borax ʒiij., rose water f℥x., and honey and tincture of myrrh, of each ℥ss.

See Article XXIX. p. 48.

CAMPHOR — *Camphora.*

The camphor mixture is made by rubbing half a drachm of camphor with ten or twelve drops of rectified spirit, and then adding a pint of water: dose from f℥i. to f℥ij. in low fevers; or,

℞ Misturæ camphoræ - - ℥viii.
Acidi sulphurici diluti - ʒi.

Misce. Of this three table-spoonsful may be taken occasionally, in nervous affections.* The spiritus camphoræ, made by mixing ℥iv. of camphor with Oij. of rectified spirit, is a useful application in chronic rheumatism. The linimentum camphoræ, but more especially the linimentum camphoræ compositum, is most serviceable in sprains and rheumatic pains, or in cases of cynanche tonsillaris, to be put on flannel and applied round the neck.

℞ Camphoræ - - - grs. vi.
Moschi - - - grs. vi.
Opii - - - - grs. iiss.

Misce fiat pulvis. To be taken in a little syrup in tetanus.

Camphor combines well with calomel, and prevents it from irritating the stomach. ℞ Calomel ℈iij., camphoræ ℈i.: fiant pilulæ xx.; sumat unam omni nocte, to be continued till the mouth is affected, in syphilis or hepatitis. ℞ Camphoræ grs. vii., pulv. antim. grs. iij., confect. rosæ q. s.; misce, fiat bolus, in phrenitis, after bleeding and

* The emulsio camphoræ of Dr. Duncan's Edinburgh Dispensatory, is a much more valuable and efficacious medicine; in typhus fever I have given it with success, in doses of ℥iiss. every five hours.

purging. ℞ Camphoræ grs. vi., opii extracti grs. x. grs. xii., aquæ distillatæ ferventis ℥xii.; rub the camphor and opium well together, and add the boiling water to form a collyrium; useful in the early stages of ophthalmia with much pain and swelling. ℞ Camphoræ grs. iv., moschi grs. v., extract. cinchonæ grs. xii.; fiat bolus, ter in die sumendus, in hysteria. ℞ Mist. camph. f℥vi., aq. ammon. acetat. f℥ij.; misce, capiat ℥ij. sexta quaque hora, in low fever.

In cases of poisoning from camphor, Mr. Stowe recommends vomiting with *sulphas zinci* (℈i.); glysters of soap dissolved in water; and active purges when the vomiting has ceased. When as much as possible of the poison has been expelled, an infusion of coffee is useful; if there is stupor, bleed; but no vegetable acids are to be given till the poison is expelled.

℞ Lin. sapon. compos. f℥ijss., tinctur. opii f℥ss; misce. An external application in chronic rheumatism.

See Article XXXI. p. 52.

Lesser Cardamom — *Cardamomum Minus.*

The dose of the powder is from grs. vii. to grs. xviii. A tea-spoonful of the tincture is a dose in a little tepid water as a cordial. ℞ Magnesiæ ʒi., tincturæ cardamomi f℥ss., aquæ cinnam. f℥vii.; misce. Of this two or three table-spoonsful may be taken for pain in the stomach from flatulence, in dyspepsia, the bowels being open.

See Article XXXVI. p. 60.

Cassia Pulp — *Cassiæ Pulpa* (Lond.).

The pulp of the fruit of the cassia fistula is much used by the natives of India in electuary, for cos-

tiveness, in doses of from ʒiv. to ʒvi. mixed occasionally with a little pounded black pepper.

See Article XXXVII. p. 62.

Castor — *Castoreum.*

In substance the dose is from gr. viii. to ℈i.; tincture from ♏xv. to fʒiiss.

℞ Castorei, moschi, assafœtid. āā grs. v.
Olei succini rectificati ♏iij.

Misce, fiant pilulæ tres, bis terve in die sumendæ, in epilepsy. ℞ Tinctur. aloes compos. fʒvi., tinct. castorei fʒiiss., vini ferri ʒss.; misce, fiat mistura, sumat fʒi. ter in die. Dr. Thomas recommended this as useful in suppressed menses, and I found it beneficial in India.*

See Article XXXVIII. p. 63.

Catechu, Extract of — *Catechu Extractum.*

Dose of the extract from grs. viii. to grs. xxv.; of the tincture, from fʒi. to fʒiiss. ℞ Catechu in pulv. trit. ℈i., confect. opii grs. xii., confec. arom. q. s.; fiat bolus, bis in die sumendus; this, in an immoderate flow of the menses, was a favourite prescription of Dr. Babington, senior. Catechu, as well as any other astringent, must be ordered cautiously in the diarrhœas of hot climates, which are generally occasioned by liver derangements, in which nothing must be pent up. The electuarium catechu compositum I have given with success in menorrhagia, in

* ʒi. of the tinct. castorei, in combination with ♏xv. of spir. ammon. fœtid, ♏xxv. of spir. ether sulph., and ʒi. of aq. cinnam., is a useful draught in hysteria.

doses of from ℈i. to ʒi., together with an infusion of cinchona or cascarilla, with a little diluted sulphuric acid.

See Article XXXIX. p. 66.

PREPARED CHALK — *Creta Præparata.*

℞	Misturæ cretæ - -	f ʒiv.—f ʒv.
	Confectionis aromaticæ -	ʒi.
	Liquor. subcarbonat. ammon.	f ʒi.
	Tincturæ opii - - -	♏xx.

Misce; fiat mist. Of this a couple of table-spoonsful may be taken occasionally in simple diarrhœa. Common dose of the mist. cretæ is from f ʒi. to f ʒij. The *hydrargyrum cum creta* is a most valuable alterative medicine in India, dose from grs. x. to grs. xv. twice in the day. Ten or fifteen grains of the pulvis cretæ compositus is one of the safest restrainers in diarrhœa, where no fever prevails. Dr. Thomson recommends the *pulv. cret. comp. cum opio*, as more efficient in Europe, in doses of from ℈i. to ʒi. for an adult.

See Article XL. p. 67.

CHAMOMILE FLOWERS — *Anthemidis Flores* (Lond.).

Dose of the powder from ℈i. to ʒi.; that of the decoctum anthemidis nobilis, from f ʒss. to f ʒiss.; of the infusion anthemidis, from f ʒi. to f ʒiij.; of the extract, from grs. viii. to ℈ij.—ʒi.

℞	Assafœtidæ - - -	℈iss.
	Extracti anthemidis - -	ʒi.
	Pulveris rhei - - -	℈i.

Misce; fiat massa, in pilulas xxx. dividenda. Three of which may be taken as a dose, morning and even-

ing, in dyspepsia attended with flatulence. Chamomile tea (inf. anthem.), is a good stomachic, in doses of three or four ounces, taken early in the morning, in India. Dr. Babington gave the following as a stomachic and tonic: ℞ cham. flor. in pulv. trit. ℈i., myrrh. pulv. grs. v., rhei grs. iij.; fiat pulvis, bis in die sumendus.

See Article XLI. p. 68.

CHARCOAL — *Carbo Ligni.*

The charcoal poultice is prepared by adding to a sufficient quantity of the common linseed-meal poultice as much charcoal in fine powder as it will bear, then let the whole be well mixed. It is a useful application to foul ulcers, but not nearly so efficacious as the balsam of Peru.

See Article XLII. p. 70.

CHINA ROOT — *Smilax China* (Lin.)

I have already mentioned the dose of the decoction of the root of the smilax China, a plant so little now sought after in Europe, though so much esteemed in China and in Japan. In the first mentioned country, the root is called *too-fuh*, and in Japan *sankira*, also often, but vulgarly, *kuakuara;* it is found growing in the neighbourhood of Papenberg and Kosido. (See Flor. Japon. p. 152.). The smilax China is common in the woods of Cochin-China, and called by the natives *cay-khuc-khac*; of it Loureiro says, "valet in quibuscunque doloribus vagis, venereis, *aut rheumaticis.*" See Flor. Cochin-Chin., vol. ii. p. 622.

See Article XLIII. p. 72.

CINNAMON — *Cinnamomum.*

The dose of the bark, which is much prized by the Hindoos, is from grs. viii. to ʒiss.; of the water, from f ʒi. to f ℥vi. or vii.; of the tincture from f ʒi. to f ℥ss.; of the compound powder from grs. x. to ʒss.

℞ Tincturæ cardamomi composit. f ʒvi.—℥i.
Aquæ cinnamomi - - - f ℥vi.

Misce, capiat cochlearia magna iij. bis terve in die in dyspepsia. The spiritus cinnamomi is useful in cases of languor, in doses of f ʒi. to f ℥ss. in a little barley-water.

See Article XLV. p. 75.

CLOVE — *Caryophillus Aromaticus.*

The dose of powdered cloves, is from grs. iij. to grs. xij.; that of the oil from ♏iij. to ♏viii. mixed with a little syrup. The best mode of administering cloves, is in the form of the *infusum caryophillorum* (Lond.); made with one drachm of bruised cloves, boiling water half a pint; macerate for two hours: of this from f ℥i. to f ℥iiss. may be given thrice in the twenty-four hours in languors, in dyspepsia. Mr. Brande informs us, that a five grain pill, made of jalap and powdered cloves, equal parts, will generally open the bowels.

See Article XLIX. p. 83.

COLOQUINTIDA — *Colocynthidis pulpa.*

The dose of the extractum colocynthidis is from grs. v. to ʒss.; of the extractum colocynthidis compositum from grs. vii. to grs. xxv.; of the pilulæ colocynthidis compositæ from grs. x. to grs. xxv.

℞ Extracti colocynthidis compositæ grs. xxvi.
Extracti jalapæ - - - ℈ij.
Pulveris rhæi - - - ℈i.
Hydrargyri submuriatis - grs. xvi.
Syrupi zingiberis q. s.

Fiant pilulæ xxiij. one, two, or three may be taken at bed-time, according to circumstances, as a cathartic.

℞ Extracti colocynth. comp. grs. xv.
Calomel - - - grs. iij.
Syrupi zingiberis q. s.

Fiant pilulæ iv. primo mane sumendæ.

℞ Pilulæ colocynth. composit.
Pulveris rhæi, āā - - grs. x.
Hydrargyri submur. - grs. iij.
Olei lavendulæ - - ♏iv.
Syrupi simp. q. s.

Misce, fiant pilulæ v. primo mane sumendæ, as a stomachic purge.

℞ Extracti colocynth. - ʒi.—ʒiss.
Olei ricini - - - ʒij.
Decoct. flor. cham. - Oi.

Misce, fiat enema, statim injicienda. For constipation.

Poisoning with colocynth *, is to be treated nearly in the same manner as that recommended for poisoning with camphor; with this, certainly, great difference, that after vomiting with sulphas zinci, and giving an infusion of coffee, the camphor mixture may be ordered. Mr. Stowe informs us, in his Toxicological Chart, that the fruit of the Fewillea cordifolia, has lately been found to be a powerful antidote against vegetable poisons. See Annals of Philosophy, for May 1820.

See Article L. p. 86.

COLUMBA ROOT — *Calumbæ Radix.*

The dose of the infusion is from f ʒi. to f ʒiiiss.; of the tincture from f ʒi. to f ʒvi. ℞ radicis calumbæ grs. xii.; rhæi.; ferri rubigin. āā, grs. viii.; misce, fiat pulv. bis in die sumendus, in chlorosis or dyspepsia. ℞ pulveris calumbæ grs. xii.; sulphatis potassæ grs. x.; fiat pulvis, bis in die sumendus, in dyspepsia. ℞ infusi calumbæ f ʒxii.; tincturæ cascaril. f ʒi.; tincturæ cardamoni f ʒi.; misce, fiat haustus, bis in die sumendus in weakness, and dyspepsia. ℞ magnesiæ subcarb. ℈i., infusi calumbæ f ʒi., tincturæ calumbæ f ʒi., fiat haustus. Dr. Paris orders this in lithic diathesis.

See Article LIII. p. 91.

CORIANDER SEEDS — *Coriandri Semina.*

℞ Semin. coriandri contus.	-	grs. x.
Pulv. rhæi	- - -	grs. x.
Pulveris calumbæ	- -	grs. x.

* The ancients gave colocynth in the form of clysters, in sciatica and palsy; and I find Dioscorides, in speaking of it, says, (κολοκυνθις) εστι δε κακο στομαχος λιαν.

Misce. Fiat pulvis, hora somni sumendus, in dyspepsia, with flatulence and costiveness.

See Article LIV. p. 92.

COWHAGE — *Dolichi Prurientis Pubes* (Edin.).

℞ Spicul. dolichi pub. grs. x.
Mel. optim. q. s. Misce.

Ut fiat *bolus*, bis in die sumendus; or the same quantity of the cowhage may be rubbed into a powder, with gr. xii. of tin filings (limatura stanni), and taken night and morning with a little syrup, in worm cases, to be followed by a brisk purge.

See Article LVII. p. 96.

CREYAT ROOT — *Radix Justiciæ Paniculatæ.*

℞ Pulv. radicis just. panicul. grs. x.
Pulv. rhæi - - - grs. vi.
Pulv. piperis nigri - grs. viii.

Misce, fiat pulv., hora somni sumendus, in dyspepsia. The infusion and tincture may be made like those of the columba root, and used in the same proportions, and for the same complaints. The creyat root is a most useful and valuable bitter.

See Article LX. p. 101.

CROTON — *Croton.*

Under the article croton, at p. 101 of this volume, will be found, an account of the different modes of administering this drastic cathartic in India. The expressed oil is chiefly used in England, given cautiously in doses of one drop in conjunction with mucilage of acacia gum, sugar and almond emulsion; or pills composed, of six drops of the oil made into eight pills with a little crumb of bread; of these one may

be taken every six or eight hours, till complete evacuation is procured. In this last form, I have known it to act when other cathartics had failed; and in some habits, it seems particularly to influence the biliary system*, without the irritating effects of mercury. An electuary is also now prepared with the oil. In the Quarterly Journal of Science, Literature, and the Arts (vol. xx. p. 231.), will be found some account of the best mode of administering the croton oil, by Mr. Frost, that gentleman obtained from grs. xxxii. of the oil, of active matter (soluble in ether and alcohol, and combined with a very small portion of fixed oil), grs. 8·5, and of inert fixed oil, grs. 23·5. He suggests another mode of ascertaining the rate per cent. of active matter, than that adopted by Dr. Nimmo; and has discovered, that a principle, analogous in its nature to tiglium seeds oil, pervades the expressed oil of the seeds of several species of jatropha and ricinus. For an account, by Mr. Frost, of the *pinhoen* or *emetic oil*, obtained from a species of jathropha in South America, the reader is referred to the London Journal of Science, for October 1825, as adverted to by Dr. Copland, in his excellent London Medical Repository, for February 1826, p. 179. At p. 108, I gave Dr. Nimmo's formula for the alcohol solution of the croton oil, administered in the quantity there mentioned, as a dose in *delirium tremens*. Dr. Smith ordered the following in constipation. ℞ olei croton. ♏ij.; mucilag. tragacanth. f℥i.; sacchari albi q. s.; tere in mortario ut fiat mistura; one half to be taken at first, and the other some hours afterward if necessary.

* See some judicious observations on the similarity of the evacuations produced by calomel and croton oil, in the Transactions of the Medical Society of Calcutta, vol. i. article Croton, by Dr. J. Adam.

Before concluding what I have to say about this extraordinary substance, I must mention, that I have been just informed, that one great advantage to be derived from the oil of croton is, that we may frequently be enabled by it to purge maniacs, when it could be done in no other way, simply by touching their tongues with it. I moreover see by the Flora Cochin-Chinensis (vol. ii. p. 582.), that Loureiro found the croton tiglium growing in Cochin-China; of the seeds he says, "purgans, emetica, emmenegoga, valet in obstructionibus rebellibus, precipue uteri, hydrope et cacochymia ex humoribus crassis." The oil has been found to be eminently useful as a drastic purge in apoplexy; however, notwithstanding all this high commendation of the new medicine, I find doubts expressed respecting it by a very competent judge. Dr. James Johnston, in his Medico-Chirurgical Review, for Jan. 1826, in noticing a report from Mr. Tegart, inspector of army hospitals, on the subject of croton oil, observes, "we fear the author has over-rated this new remedy, which we think may prove a useful *adjuvant* to other purgatives, without producing the disagreeable effects resulting from its solitary employment, and this is the result, we believe, it will ultimately retain." Mr. Tegart, I ought to have said, states, that he had found the oil useful as an excellent febrifuge; keeping the bowels open, increasing the urinary discharge, and relaxing the skin; the mode of giving it for this purpose, which he recommends, is, "dissolving the oil in spirits of wine, and then diluting the solution in any palatable vehicle, so as to give half a drop for a dose.

N.B. Since writing the above article, I have ascertained, that there is now prepared by Mr.

Noekes, No. 97, Oxford Street, an expressed croton oil of a superior quality, of which two drops is a sufficient dose, in syrup or mucilage; this quantity purges copiously and easily, without producing any of the distressing symptoms which usually accompany the use of this oil as formerly proposed. Mr. Noekes is the successor of Mr. Pope, who appears first to have discovered this new mode of obtaining the expressed oil of croton seeds; and which is accomplished simply, by carefully removing from each seed, the thin filament in which the kernel is closely enveloped, previously to expressing the oil. See a paper on the subject in No. 13. of the Medico-Chirurgical Transactions. I perceive, that Dr. *Calderini* has lately by experiments proved the purgative quality of the euphorbia lathyris, and that Mr. Grimaud has announced to the royal academy of medicine, that the Italian physician is convinced, that the oil obtained from it, is preferable in every respect to that got from the croton tiglium! (See London Medical and Physical Journal for June 1825, p. 530.)

See Article LXI. p. 109.

DILL SEED — *Anethi Semina.*

The dose of the powdered seeds is from grs. x. to ℈i. A couple of tea-spoonfuls of the water, Mr. Brande says, seldom fails to relieve the flatulence of stomach to which infants are subject.

See Article LXX. p. 123.

FEBRIFUGE SWIETENIAN — *Swietenia Febrifuga* (Roxb.).

Of the powder of the bark (commonly called bark of the red wood tree), from ʒi. to ʒiv. ʒv. and ʒvi.

may be given in the twenty-four hours. Of the tincture, prepared in the same way that the *tinctura cinchonæ* is, the dose may be from f ʒi. to f ʒiiss. and ʒiij., and repeated; of the infusion, from f ℥i. to f ℥iij., twice or thrice daily. It is to be hoped, that a sulphate may soon be prepared with this bark, of virtues somewhat similar to *sulphate of quinine* (quininæ sulphas,) got from the cin. oblongifolia, or red bark; also a *syrup*, a *tincture*, and a wine. The sulphate of quinine is a most powerful tonic in intermittent fever, dyspepsia, and rheumatism *; so much so, as to have rendered the first of these altogether within its controul. I usually order ϑi. of it to be dissolved in a few drops of diluted sulphuric acid; and that to this should be added f ℥xviii of water. Of the mixture f ℥vi, may be taken daily, in doses of f ʒij. at a time; so administered I have never found it fail in putting a stop to the most obstinate quartan. The tincture is made by adding grs. vi. of the sulphate to f ℥i. of alcohol; the syrup by mixing together two pounds of simple syrup and sixty-four grains of sulphate of quinine; six spoonfuls of this syrup is sufficient to arrest the progress of an intermittent. See Dr. Dunglison's edition of Magendie's "Formulaire," p. 81. The Italians use the bark of the *quina bicolorata* as a febrifuge; it contains a bitter principle resembling colocyntine, but neither quinine† nor cinchonine; in South America they employ for the same purpose the whole of the low growing plant, *Erythræa chilensis* ‡, which has a pleasant bitter taste, much resembling the columba root, or

* See London Medical and Physical Journal for Feb. 1826, p. 106.

† See Medical Repository for Feb. 1826, p. 186.

‡ In the language of Chili it is called, Mr. Frost informs me, *kassen-laugen.*

the gentiana lutea; and a substance has lately been obtained by Oerstädt from black pepper, said to be a more powerful febrifuge than any of these. See article Black Pepper in this chapter of the work.*

See Article LXXII. p. 129.

FENNEL, SWEET — *Anæthum Fœniculum* (Lond.).

Of the bruised seeds the dose is from grs. xv. to ʒi.; of the water from f ʒii. to ʒv. ℞ magnesiæ ʒiiss.; pulv. rhæi. ϑi.; aquæ fontan.; aqūæ fœniculi āā f ʒiiss.; tincturæ lavendulæ comp. f ʒss.; misce, f. mistura. Two table spoonsful to be taken thrice in the twenty-four hours, to open the bowels in dyspepsia with flatulence; or the plain aquæ fœniculi may be taken as a carminative.

See Article LXXXI. p. 142.

GALBANUM — *Bubon Galbanum* (Lond.).

The dose of the pilulæ galbani comp. is from grs. viii. to grs. xv. or ϑi. taken every night, in *chlorosis* or *hysteria*. The pilulæ assafœtidæ comp. (Edin.), and pilulæ myrrhæ comp. (Dub.), are nearly the same as the pil. gal. comp., and doses the same. Dose of the tincture from f ʒss. to f ʒiij. as an emmenagogue. ℞ pilulæ galban. comp. ʒi., aloes spicat. ϑi., syrupi zingiberis q. s.; fiant xx. sumat duas, bis in die, in amennorrhœa. ℞ pilulæ galban. comp. ʒij., ferri rubigin. ϑiv., syrup zingiberis q. s.; fiant pilulæ xl.; of which three may be taken twice in the day in *chlorosis*. (*Babbington.*) The emplastrum galbani compositum (Lond.) is an excellent suppurative for indolent tumours.

* Also see article *Shevium*, in volume ii.

See Article LXXXII. p. 144.

GALLS — *Gallæ.*

The tincture has been given in intermittent fevers* in doses of from f ʒss. to f ʒiij. ℞ gallarum contusarum ʒi., adipis præpar. ʒv. to ʒvii.; misce, fiat unguentum; to be applied morning and evening to the parts affected, in cases of *blind piles;* to this if required ʒi. of opium may be added, or camphor. ʒss. As a gargle for relaxation of the uvula, Mr. Brande recommends f ℥vii. of an infusion of galls, and f ℥i. of spirit of wine. The infusion to be made by adding ʒij. of bruised galls to f ℥xii. of boiling water.

See Article LXXXIII. p. 147.

GAMBOGE — *Gambogia* (Edin.).

The dose of the substance, Pearson thinks, may be as far as from grs. iij. to grs. xv. or grs. xx., which is more than is usually given. The pilulæ gambogiæ compositæ is a very active form for purging off bile, the dose from grs. xii. to grs. xv. or ϑi. ℞ gambogiæ in pulv. tritur. grs. v. vel grs. vi., supertart. potassæ ϑi., confect. cassiæ (Lond.) q. s.; fiat bolus; to be taken at bed-time, in dropsy. ℞ gambogiæ grs. iv., tincturæ sennæ comp. f ℥ss., tincturæ jalapæ f ʒiss., syrup. zingib. f ℥ss.; fiat haustus, in anasarca. ℞ pilul. gamb. comp. grs. viii., calomel grs. iij., pulv. scillæ exsiccatæ gr. i. vel grs. iss., confect. arom. q. s.; ut fiant pilul. iii.; two of which may be

* Murray, in his Apparatus Med. (vol. vi. p. 9.), holds out a caution against using such strong astringents, as likely to bring on visceral obstructions. See also Pearson's Synopsis of the Mat. Med., p. 353.

taken at bed-time and one in the morning; and the medicine to be continued every alternate day for a few days together, in dropsy, if found beneficial. ℞ gambogiæ, hydrargyri muriatis āā ʒss., potassæ supertartratis. ℈v.; fiant pulveres decem equales; one or two to be taken every other night, in dropsy consequent of liver obstructions (*Dunn*). On the continent an alkaline solution is given in doses of from drops xl. to l. in coffee or milk and water, increasing the dose, in hydropic and worm cases. The solution is prepared by adding ʒi. of the gum-resin to a strong lixivium of subcarbonate of potass, rubbing the two well together; after it has stood some time to settle, the liquor is poured off from the sediment. See Pearson's Practical Synopsis of Materia Medica, p. 202. But gamboge, it must be remarked, is but little used as a purge in India.

See Article LXXXIV. p. 150.

GARLIC — *Allium.*

The Hindoos prepare a kind of syrup with garlic, which they find useful in catarrh and pituitous asthma; it is somewhat similar to the syrupus allii of the Swedish Pharmacopœia, which is made by steeping in a covered vessel a pound of fresh garlic, bruised, in two pounds of boiling water, and adding a sufficient quantity of sugar to the strained liquor, given in doses of one or two drachms.

See Article LXXXV. p. 152.

GINGER — *Zingiber.*

The dose of the syrup is from fʒi. to fʒij.; of the tincture from fʒss. to fʒiij. As a grateful stimulant it enters into many valuable preparations.

See Article LXXXIX. p. 158.

GUM AMMONIAC — *Ammoniacum.*

℞ Misturæ ammoniaci - - f℥vi.
Oxymel. scillæ,
Tincturæ camphor. compos. āā f℥ss.

Misce. Capiat cochlearia duo sexta quaque hora; in humoral asthma, when sleep is necessary and inflammatory symptoms not feared.

℞ Misturæ ammon. - - f℥v.
Oxymel. scillæ - - f℥ss.
Vini antim. tartar. - - ℥xxvi.
Aceti distillat. - - f℥iij.

Misce, fiat mistura. Two table-spoonsful may be taken occasionally in cough or humoral asthma.

℞ Gum. ammon. - - ʒi.
Pilulæ hydrarg. - - grs. xv.
Scillæ exsiccat. - - grs. vi.
Syrup. simp. q. s.

Misce, ut fiant pilulæ xvi. One to be taken three times in the day, in asthmatic cough, when at the same time hepatic derangement is suspected.

The *emplastrum ammoniacum* is applied as a resolvent to scrophulous tumours; but is not near so efficacious as the *emplastrum ammoniaci cum hydrargyro*, which I have found to be also a powerful resolvent, applied to indurated glands, nodes, &c.

See Article XC. p. 160.

GUM ARABIC — *Gummi Arabicum.*

℞ Mucilag. gum. acaciæ - - f℥vi.
Ol. amyg. dul. - - - f℥iij.
Syrupi croci - - - f℥i.
Liquor. ammon. subcarbon. f℥ss.

Misce, fiat emulsio. Of which ℥ss. may be taken occasionally in catarrh.

℞ Bals. copaibæ - - - - f℥iss.
Mucilag. gum. acaciæ - f℥v.
Aquæ rosæ - - - f℥vi.

Misce, fiat injectio. In gonorrhœa, when inflammatory symptoms have abated. When venereal ulceration is suspected in the urethra, the following may be found useful: ℞ Calomel grs. xv., Mucilag. gum acaciæ f℥iiss.; tere simul, et adde aquæ calcis f℥v. vel f℥vi., ut fiat injectio.

See Article XCI. p. 162.

GUM TRAGACANTH — *Tragacantha* (Lond.).

The pulv. tragacanth compos. is an excellent medicine in tickling coughs; ʒi. may be given as a dose in barley-water. Of the mucilage of tragacanth, made by dissolving with a gentle heat an ounce of the gum in f℥x. of water, f℥ss. or more may be taken frequently for a teazing cough; for which purpose, Dr. Thomson thinks, it is better suited than the mucilage of gum Arabic.*

* ℞ Pulv. trag. comp., pulv. contrayer. comp. āā ℈i., aquæ distillat. f℥i., aquæ cinnam. f℥iij., syrup. croci f℥i.; misce, fiat haustus. A quieting draught, recommended by Dr. Merriman as the safest for a woman immediately after delivery, to be repeated every sixth hour, if necessary.

See Article XCIII. p. 164.

HELLEBORE, BLACK — *Helleborus niger.*

℞ Pulveris rad.* hellebor. nigri grs. xv.
Calomel - - - grs. v.
Pulv. ipecac. - - - grs. iij.
Syrup. zingib. q. s. Misce.

Ut fiant pilulæ quatuor; capiat duas, quarta quaque hora. In mania or dropsy, to be repeated cautiously till complete evacuation has been procured; or pills may be made with the extract, the dose of which is from grs. v. to grs. viii. The *tincture* of the Edinburgh Pharmacopœia may be taken in doses of from ♏xxx. to ƒʒi. in uterine obstructions†, in which cases it has been considered as very efficacious.

HELLEBORE, WHITE — *Veratrum album.*

℞ Unguenti veratri - - ʒiij.
Sulphuris - - - - ℥ss.

Misce, fiat unguentum. This I have thought useful in the lepra græcorum; or the unguent. verat. may be mixed with an equal proportion of the unguentum hydrargyri præcipitati albi, as an application in scabies. Mr. Brande is of opinion, and he is right, that the ung. verat. is never to be used in children's cases, which the other may be if with caution. The tinctur. verat. albi (Edin.) has been given in doses of from ♏iij. to ♏xii. to produce vo-

* Mr. Brande, in his Manual of Pharmacy, says, the root ought never to be taken.

† In case of poisoning with either of the hellebores, Mr. Stowe recommends the same treatment as in cases of poisoning with colocynth.

miting in mania. Of the wine of white hellebore, as ordered by Mr. Brande, the dose is from ℥v. to ℥xxx.; this was a favourite medicine of Dr. J. Riddel in mania some seventy years ago. The celebrated *eau medicinale* was, at one time, supposed to contain white hellebore, but it is now pretty well ascertained that that medicine owes its antipodagric powers to the colchicum autumnale.* White hellebore owes its virtues to *veratrine*, obtained by Meissner, as well as by M. M. Pelletier and Caventou, from the seeds of the veratrum sabadilla; it would appear, by Majendie's "*Formulaire*," that a quarter of a grain (gr. 0·205 troy) rapidly induces an abundant alvine evacuation.

See Article XCIV. p. 167.

HENBANE† — *Hyoscyamus.*

The doses of the extract and tincture have already been mentioned. A solution of the extract in water, in the proportion of ʒi. to f℥i., dropt into the eye, has been recommended by Professor Himly for facilitating the operation of cataract, by its effect of dilating very much the pupil. It is advisable often to combine calomel with henbane, in India, even when simply sleep or quiet is sought. ℞ Extract. hyosciam, calomel, āā grs. iv., fiant pilul. ii., to be taken at bed-time; to this grs. ij. extract. conii may be

* The extraordinary property of this medicine, in allaying the severity of the pain in gout, is well known: dose of the substance (dried bulb) from grs. ij. to grs. x.; of the saturated vinous infusion from ℥xxv. to ℥lxxv. My excellent friend, Dr. Theodore Gordon, informs me, that he has found it most efficacious in those agonizing and deep-seated head-aches which have resisted every other mode of treatment.

† Poisoning with henbane, according to Mr. Stowe, is to be treated as poisoning with camphor.

added if indicated. ℞ Calomel grs. iv., extract. hyoscyam. grs. vi., pulv. ipecac. grs. iij., opii grs. ij.; fiant pilul. iii., one to be taken thrice in the twenty-four hours in mania. ℞ Camphor. grs. x., extract. hyoscyam. grs. v., opii grs. iss.; fiant pilulæ iv., to be taken at bed-time in mania.

See Article XCVII. p. 175.

HORSE-RADISH — *Raphanus rusticanus; radix* (Dub.).

The dose of the root in substance is from ℈i. to grs. xxv. The syrup was ordered by Cullen for hoarseness proceeding from relaxation. ℞ Sinapi semin. contus. ʒvi., raphan. rustican. incis. ʒvi., aquæ ferventis lbi.; macera per horas tres, dein adde spirit. pimentæ ℥ij.; misce; of this, in palsy, two ounces may be taken twice in twenty-four hours. ℞ Rad. raphan. rustic. contus. ʒvi., semin. sinapis contus. ℥i., farin. sem. lini ℥iiss., aceti q. s.; misce, fiat cataplasma, to be applied to the feet or ancles in palsy. The dose of the infus. armoraciæ compositum (Lond.) is about from f℥ss. to f℥iiiss., given in palsy or dropsies. Of the spiritus armoraciæ compositus, which Dr. Thomson recommends in dropsies attended with debility, the dose may be from f℥i. to f℥v., given best, he says, combined with infusion of foxglove or of juniper berries.

See Article C. p. 180.

IPECACUAN — *Ipecacuanha.*

At page 181, I have mentioned several plants which might be substituted for ipecacuanha; and observed, that Loiseleur Deslongchamps found that

of all those he had any experience of in Europe, the leaves of the asarum Europæum were decidedly the most emetic: the dose of the fine powder is from grs. xx. to grs. xl. to an adult. The euphorbia lathyris is amongst those which the above-mentioned gentleman discovered to have an emetic quality; but by his account it appears that the seeds may be rather considered as an efficacious purge, taken to the quantity of one dozen; and we know that M. Grimaud has lately announced to the Royal Academy of Medicine of Paris, the experiments of the Italian physician Caldirini, who would appear to think the purgative powers of the e. lathyris* to be in every respect preferable to those of the croton tiglium!

Ipecacuan in India is a most useful medicine, and in idiopathic dysentery is one most to be relied on, after purging freely with castor-oil. ℞ Pulv. ipecac. gran. viii., magnes. gran. xvi.; misce, fiat pulv. et divide in chart. quatuor, one to be taken every three hours, in dysentery. ℞ Pulv. ipecac. gran. vi., pilul. hydrarg. gran. ix., pulv. rhæi gran. vi., syrup zingib. q. s.; fiant pilulæ vi., one to be taken night and morning, and continued for ten or fifteen days, in chronic liver flux. To vomit freely, the dose of the powder is from grs. xii. to ʒss. Of the vinum ipecacuanhæ, if required as a diaphoretic or expectorant, for a child, the dose may be from ♏viii. to ♏xxv.; if to vomit freely, two tea-spoonfuls may be taken; in croup it is, so given†, invaluable, or in the feverish attacks so common to children in

* See Dr. R. Macleod's valuable Medical and Physical Journal for June 1825, p. 530.

† Or a safer way may be to give a tea-spoonful every ten minutes till it vomits.

India, purging at the same time, in both affections, with calomel during the night, in doses of from gr. i. to grs. iij. or grs. iv.; for an adult, as far as f℥vi. or more of the wine are given as an emetic. Of the pulv. ipecac. composit. from grs. x. to ℈i. may be ordered in a little tepid water, to produce copious perspiration in acute rheumatism, assisted by plentiful dilution with warm rice gruel.

Ipecacuanha has of late years been found a valuable medicine in certain dyspeptic complaints, in doses of from gr. i. to grs. iij. in the form of a pill, with the addition of a little soap, and taken directly after eating; at the same time, Mr. James recommends that grs. ij. or grs. iij. may be taken at bedtime to obviate costiveness. See London Medical and Physical Journal for June 1825, p. 530. By an accurate analysis of ipecacuanha, by Magendie and Pelletier, which may be found in a memoir read at the Academy of Sciences of Paris, on the 25th of February, 1817, and inserted in the Journal de Pharmacie (vol. iii. p. 145.), it was discovered that ipecacuanha contained a particular active principle, which those gentlemen named *emetine*, and which produces vomiting, in doses of from gr. ¼. to grs. iv.* But this substance, Mr. Brande† thinks, cannot be well depended on as a substitute for ipecacuanha. ℞. Syrup. simplic. ℔i., emetinæ puræ gran. iv.; misce, dosis cochlearia modica duo vel quatuor. *Magendie.*

* See Loiseleur Deslongchamp's Recherches et Observations sur l'Emploi de plusieurs Plantes de France, p. 3.

† See Brande's Manual of Pharmacy, p. 106. For the mode of preparing the emetine, see Dunglison's Formulary, p. 60.

See Article CII. p. 183.

JALAP — *Jalapæ radix.*

At page 183, I have mentioned several articles which might be substituted for jalap. Of the powder of the common jalap the dose is from grs. xv. to ʒss. for an adult, usually given (when required simply to evacuate the bowels freely) with as much of the powder of potassæ supertartras. Jalap is one of our most certain and powerful cathartics, and is of the *greatest* use, in India, at the commencement of fevers, by often immediately, before it operates, producing a considerable degree of nausea, or even vomiting, and thereby not rarely exciting diaphoresis. Of the tincture the dose is from fʒi. to fʒiv.; of the extract may be taken from grs. x. to ʒss.; of the tinctura sennæ composita (Edin.) from fʒiss. to fʒvi. or fʒvii. ℞ Pulv. rhæi gran. xii., pulv. jalapæ gran. xv., hydrarg. submuriat. gran. v., syrupi zingiberis q. s.; ut fiant pilul. vii., three to be taken at bedtime, and two in the morning early, to carry off bile, or at the commencement of fever. ℞ Infus. sennæ fʒxii., tinctur. sennæ fʒi., tinctur. jalap. fʒi., potassæ tart., syrup. simp. āā fʒi; misce, fiat haustus; one half to be taken in the morning early, and the other three hours afterwards, as a purge in fever.

See Article CIV. p. 185.

KINO — *Kino.*

The doses of the substance and tincture have already been mentioned. ℞ Extract. cinchonæ, gum kino āā ʒss., aluminis, pulveris zingiberis āā ℈ss., syrupi croci q. s.; misce ut fiant pilul. xviii., three

of which may be taken twice or thrice daily, in leucorrhœa, washing each dose down with f℥iss. or ℥ij. of the infusum cascarillæ. ℞ Tincturæ kino, tincturæ catechu āā f℥ss., tincturæ opii. f℥ij; misce, fiat mistura; of this I have given ♏xxv. thrice in the twenty-four hours, with great success, in cases of spitting of blood, as recommended by Dr. R. Thomas, in his Modern Practice of Physic.

See Article CVII. p. 191.

Leech — *Hirudo.*

In Dr. James Johnson's excellent Medico Chirurgical Review for December, 1825, there is some account of the means used by the Neapolitans to induce leeches to fix on any particular spot, namely, by touching the part with the point of a quill, recently taken from a pigeon's wing; that gentleman notices another mode of whetting the appetites of those little animals, viz. by putting them into some porter for a few minutes. The Mahometan doctors in India adopt a method which I have never known to fail, which is, to scratch slightly the part you wish them to fix on, with the point of any sharp instrument, so that the leech may taste the blood. The small brown leech of China, called by the Chinese *ma-hwang*, is very voracious.*

See Article CX. p. 195.

Linseed — *Semen Lini.*

℞ Olei lini	- - - -	f℥xii.
Liquor. calcis	- - -	f℥vii.

* See an interesting account of the poisonous leeches of Ceylon, by J. Tytler, Esq., in the Transactions of the Medical Society of Calcutta, vol. i. p. 117.

Misce. An excellent application for burns, when the violent inflammation is a little abated. ℞ Olei ricini f℥i., olei lini f℥v.; misce, fiat enema. In cases of ileus, or inflammation of the rectum, accompanied with constipation.

See Article CXVII. p. 208.

MANNA — *Manna.*

℞ Magnes. sulphat. - - -	℥i.
Mannæ - - - - -	℥vi.
Tincturæ sennæ - -	f℥iss.
Aquæ ferventis - -	f℥v.

Misce, fiat haustus. For a purge. To keep the bowels open, and cool the frame when heated, in India, ℥ij. of the sulphate of magnesia dissolved in f℥viii. of tepid water, and taken an hour before breakfast, is an excellent remedy; so forming a kind of mineral water, which may be continued for ten or fifteen days together; it never sickens the stomach; on the contrary, it excites appetite, and clears the complexion, possessing, I am inclined to believe, a somewhat alterative quality. ℞ Mannæ optim. ol. amygdal. āā f℥i., kali præp. gran. xii., aquæ cinnamom. aquæ fontan. āā f℥iij.; the manna, oil, and kali having been well rubbed together, the waters are to be added, and two ounces to be taken twice daily: I have found this prescription, as recommended by Dr. Babington, very useful in inflammation of the kidneys, in India. ℞ Mannæ ℥i., mucilag. gum Arab. f℥ss., ol. amygdal, syrup. aurantiarum āā f℥iiss.; misce, ut fiat *illinctus*, of which a tea-spoonful may be taken when the cough is troublesome in consumption. Cullen took some pains to show that there was but little difference

betwixt manna and sugar, a notion well combated by Pearson, in his valuable Practical Synopsis of Materia Alimentaria and Materia Medica, p. 192.

See Article CXXVII. p. 228.

Musk — *Moschus.*

Mr. Brande gives us the following mode of preparing the *mistura moschi:* ℞ Moschi, acaciæ gommæ contriti sacchari purificati, singulorum drachmam, aquæ rosæ fluiduncias sex; let the musk and sugar be well rubbed together, adding the rose-water by degrees; of this the dose may be from f℥i. to f℥iiss., given every three hours, in hooping-cough. Mr. Brande expresses his doubts of the efficacy of musk, and I am inclined to coincide with him, though many able medical practitioners have thought it a valuable antispasmodic, such as *Pringle, Whytt, De Berger,* Dr. Parson* and others. Cullen informs us, that it is best given in substance to the extent of from ℈i. to grs. xxx. in the form of a powder or bolus. ℞ Camphoræ gran. v., moschi, ℈i.; misce fiat pulv., in rigid spasm. ℞ Camphoræ gran. vi., moschi gran. xii., opii gran. iss. vel gran. ij.; misce, fiat pulvis; in the same. ℞ Moschi gran. xxv., acaciæ gummi ʒss.; misce optime, dein adde, aquæ rosæ f℥iss., etheris sulphur. f℥iss., fiat haustus; in typhus fever. ℞ Misturæ camphoræ, mistur. moschi āā f℥iijss., syrupi zingib., spirit. ether. sulphuric. āā f℥ij.; misce, fiat mistura; a table-spoonful to be taken every four hours or oftener, in nervous fever. ℞ Moschi gran. x., camphoræ gran. iv., extract cinchonæ gran. viij., syrupi zingiberis q. s.; ut fiat bolus, ter in die sumendus, in epilepsy.

* See Alston's Materia Medica, vol. ii. p. 543.

See Article CXXVIII. p. 230.

MUSTARD — *Sinapis.*

The unbruised seeds may be given in much greater quantities, internally, than the bruised; which last, in the dose of about ʒij., proves emetic. ℞ Sem. sinap. alb. contus. ℥iiss., radicis armoraciæ ℥ii., cort. aurantiarum ʒvi., aquæ fontanæ Oiiss.; quoque ad Oi., cola, ut fiat decoctum; of this about a wine-glass full may be given three or four times during the day, in paralytic affections. Mustard seed is reckoned a medicine of great value amongst the Javanese and Chinese; the last-mentioned call it *keae-tsae.*

See Article CXXXIII. p. 241.

MINT — *Mentha Sativa.*

The dose of the aqua menthæ viridis may be about from f℥ij. to f℥vi.; that of the aquæ menthæ piperit. not quite so much; they are both grateful slight stimulants and carminatives, but are usually prescribed in conjunction with other medicines. The spiritus menthæ piperit. (Ph. Lond.) and the spirit. menthæ viridis are ordered in doses of from f℥i. to f ʒv. in flatulence; the oleum menthæ viridis, and the oleum menthæ piperitæ, are given in doses, the first from ♏i. to ♏x., the last from ♏ij. to ♏viii.; they are useful adjuncts to cathartic boluses or pills, or may be given singly in cases of cramp in the stomach and flatulent colic.

See Article CXXXIV. p. 242.

MYRRH — *Myrrha.*

℞ Mel. rosæ - - - -	℥iss.
Decocti hordei - - - -	f ℥xii.
Ticturæ myrrhæ - -	f ʒvi.
Aceti - - - - -	f ℥i.

Misce, fiat gargarisma in cynanche maligna. The pilulæ Galbani compositæ is one of the best and safest emenagogues; dose from grs. vii. to grs. xv. or ℈i., in pills, at bed-time. ℞ Ferri subcarbonat. ʒi., pulv. myrrhæ ℈ij., aloes spicatæ extract. ℈ij., pulv. rhæi gran. xii., syrup zingib. q. s.; misce, ut fiant pilul. xxxvi.; three or four to be taken twice in the day, to open the bowels in a suppression of the menses. ℞ Pilul. aloes. cum myrrha ℈i., pulv. rhæi gran. xii., calomel gran. ij., syrup. zingib., q. s.; misce, ut fiant pilulæ viii.; four to be taken at bed-time in suppression of the menses, and repeated if necessary. Dr. Babbington ordered the following with advantage in hectic affections accompanied with debility, and there is no better authority. ℞ Myrrhæ in pulv. trit. ʒi., kali præp. ʒss., sulph. ferri gran. xii., mucilag. gum. Arab. ʒij., decoct. glycyrrhiz. f ℥viss., spirit. piment. f ℥i. The myrrh, sulphate of iron, kali, and mucilage, to be well rubbed together, then the other articles to be added; the dose ℥i. twice or thrice daily. This is nearly the same as the famous preparation of Dr. M. Griffiths, which many have found so useful in pulmonary consumption, and which is considered as peculiarly indicated in this complaint in England, though I confess it has too often disappoint-

ed me in India.* ℞ Pulv. rhæi ℈i., pulv. myrrhæ ʒij., extract. gentianæ ʒi., extract cinchonæ ℈iss., potassæ subcarbon. ℈ij, syrup. zingib. q. s.; ut fiant pilulæ lxx.; three may be taken twice or thrice in the twenty-four hours in pulmonary consumption. The pilulæ rhæi comp. contains myrrh, and in doses of from grs. vi. to grs. xv. is a valuable laxative pill in hypochondriasis.

Dr. Alston thought that myrrh partook of the nature of saffron, and rarefied the blood. I find in Galen these words, "Papaveris succus, et myrrha, et crocus, si largius bibantur, quædam dementant, quædam mortem inferunt."

See Article CXXXVI. p. 246.

NIGHTSHADE, DEADLY — *Atropa Belladona.*

℞ Extract. Belladonæ	-	grs. xii.
Pilulæ hydrarg.	- -	grs. xii.
Pulv. Ipecac.	- -	grs. xii.
Syrup. zingib. q. s.		

Ut fiant pilul. xii. One to be taken morning and evening for a cancerous affection, at the same time the powder of the dry leaves of the belladona is to be sprinkled over the face of the sore.

℞ Belladon. fol. exsic. ℈ij., aquæ fervent. f ʒxxiv., macera per horas duas, cola, dein adde tincturæ cardam. comp. f ʒi.; of this f ʒi. may be taken twice or thrice in the day, increasing the dose if necessary, in rheumatic gout and epilepsy.

Dr. Brands of Sabzerflen has lately announced to

* It ought to be given, Dr. Thomas thinks, as an auxiliary to the foxglove. See his Modern Practice of Physic, p. 534.

the public, the general result of his inquiries into nature of narcotic plants, and states, that he found a peculiar principle extremely pure in all of them he examined, such as belladona, hyoscyamus, conium, stramonium, digitalis, &c. The narcotic principles, he says, are soluble in alcohol, æther, acids, and water, and of a highly offensive odour.*

See Article CXXXIX. p. 253.

Oil, Castor — *Oleum Ricini.*

Little need here be observed in addition to what has been already said of castor oil, at p. 253. The oil is well known and universally prized in all Eastern countries, and is, I understand, spoken of in a Chinese medical work, entitled, *Puntsaou,* in high commendation; the seeds are called in Chinese *pema-tsze.*

See Article CXLII. p. 259.

Oil Kyapootie — *Cajaputi Oleum.*

This oil, diluted with about an equal quantity of olive oil, I have found of the greatest use as an external application in chronic rheumatism. I have known benefit derived from the internal use of the oil in palsy, and that sinking of the spirits, and lowering of the pulse, which frequently attend hysteria and hypochondriasis, in doses of five or six drops in syrup; its taste is pungent but agreeable, it burns quickly, and is perfectly soluble in spirit of wine.

* See Dr. Copland's London Medical Repository and Review for Feb. 1826, pp. 183, 184.

See Article CL. p. 271.

OPIUM — *Opium.*

℞ Syrupi papaveris,
Tincturæ opii camphoratæ āā f ʒi.
Aquæ cinnamomi - - ℥ss.

Misce, fiat haustus, ter in die sumendus; in hooping-cough*, after the bowels have been fully opened. A full dose of laudanum at the beginning of nervous remittent fever in India, when the bowels have been fully evacuated, often puts a check to it, such as: ℞ Tincturæ opii fʒi., liquor. volatil. corn. cerv. fʒi. aquæ cinnam. f℥i., syrup. zingib. ʒi.; misce, fiat haustus. In the asthmatic coughs of old people, fʒiiss.—ʒiij. of the tinctura opii camphorata may be given in a little barley-water at bed-time, provided always that the bowels are open. ℞ Spirit. ammon. aromat. fʒi., tincturæ opii, ♏ xxxv., aquæ cinnam. f℥i.; misce, fiat haustus; for flatulent cramp in the stomach, when the bowels are open. ℞ Emplastri aromatici, emplastri opii, partes æquales; fiat emplastrum, for flatulent cramp in the stomach, or this embrocation may be used: ℞ Ætheris sulphurici fʒiiss., spiritus camphoræ f℥iiss., tincturæ opii f℥ss.; misce, fiat embrocatio. The following is useful in spasmodic cholic: ℞ Tincturæ opii fʒiss., olei ricini f ℥ss., misturæ assafœtidæ f℥vii.; misce, fiat enema. Mr. Brande recommends the following pills in rheumatic pains: ℞ Opii gran. iv., calomelanos gran. vi., antim. tart. gr. i., extract. conii ℈i.; misce, et divide in pilulas viii., sumantur duæ horæ decubitus. Sertuerner having discovered that the sedative principle of opium was an alkaline salt,

* Often very obstinate in India, and requiring frequent change of air.

morphia, Roubiquet, by many curious experiments confirmed his statements, and has given to the world the best method of preparing it, which may be found exactly detailed in Magendie's "Formulaire," edit. by Dr. Dunglison, pp. 3, 4.* By certain experiments prosecuted by De Rosne, that gentleman obtained a salt, in which, he thought, consisted the sedative properties of opium, but the subsequent labours of Magendie and Robiquet have proved, that De Rosne's salt, which they have named *narcotine* †, is properly speaking that principle which produces the *excitement* felt by those who take opium, *before* the sedative effects are produced. With regard to the quantity of *morphia* produced from different opiums, Dr. Thomson informs us, that he obtained from Turkey opium, nearly three times the quantity of morphia, yielded by the same weight of India opium; on the other hand Mr. Brande procured from a carefully prepared sample of English opium, a larger quantity of morphia than from the same weight of Turkey opium, (Manual of Pharmacy, p. 128.) It would seem, that opium in combination with vegetable acids or oil has its powers increased. With regard to the combinations of morphia, its acetate and citrate, they may be used in the same diseases in which opium itself is indicated. Dr. Thomson, in the last edition of his London Dispensatory, observes: "the result of my own experience inclines me to regard the acetate as well adapted for cases of phthisis and inflammatory affections, where it is of importance to obtain the sedative effect of the remedy free from the exciting quality." The efficacy of the

* The mode is also given in Brande's Manual of Chemistry, vol. iii. p. 69.

† For its preparation see Magendie's "Formulaire," edition by Dr. Dunglison, p. 14.

famous *black drop*, is supposed to be owing to the acetate of morphia*; but the acetate itself is a better preparation, and produces its effect in doses of one-sixth of a grain. In Magendie's "Formulaire," p. 11., I find the following formula for preparing a syrup of the acetate morphia: Take of perfectly clarified syrup 0i. (f℥xv., f℥vi., grs. i., troy) acetate of morphia grs. iv. (gr. 3·281 troy); with these form a syrup; this syrup is at present generally used in Paris: the dose is two tea-spoonsful every three hours; sleep, however, is often produced by a much smaller quantity. The mode of preparing a *sulphate of morphia*, will also be found in Magendie's Formulaire, and likewise a syrup of *sulphate of morphia*, the dose of which last is the same with the syrup of the acetate just mentioned. Mr. W. Stowe, in his Toxicological Chart, directs, that poisoning with opium† is to be treated in the same manner as poisoning with camphor.

See Article CLXII. p. 302.

PEPPER, BLACK — *Piper Nigrum.*

The emplastrum cantharidis vesicatoriæ compositum, and the unguentum piperis nigri, are both prepared with the black pepper, and are both useful in those complaints in which they are indicated; the first in producing a blister more certainly than the common blistering plaster, the last in paralytic affections. To raise blisters, in Upper India, where the Spanish fly is not found (except what is brought from Europe),

* Which, in its preparation, crystallizes in soft, silky prisms, which are very soluble.

† Opium appears to have been little known in China before the medical work, entitled *Pun-tsaou*, was written, in 1600, since which period it has been given in dysentery (*say-le*); its names in Chinese are *ya-peen* and *o-foo-yung*. See Morrison's Chinese Dictionary.

two excellent substitutes are resorted to, both fully noticed in Part II. of this work, viz. the fly named in Hindoostanie *telini*, which is the *meloe cichorei* of natural history, and the one called meloe trianthema. See article *Telini* in vol. ii. The moxa, which, when burnt, is so much used as an external stimulant in China and Japan, the reader will find noticed in vol. ii. of this work, under the name *Mashiputrie* (Tam.) (Artemisia Indica). There has lately been discovered a peculiar chemical principle in black pepper* by Mr. Oerstädt, somewhat resembling the resins; it would appear that M. Meli has successfully employed it as a febrifuge; it is said to be even more certain than sulphate of quinine; and more active, and must be given in smaller doses.

See Article CLXXI. p. 317.

Poison Nut, or Nux Vomica — *Nux Vomica.*

In addition to what I have already stated regarding this nut, I have to observe, that M. le Docteur *Fouquier*, physician of the Hospital of la Charité of Paris, is said to have employed the alcohol extract with success in *paraplegia*; Alibert for this purpose tells us, that "deux décigrammes" (quatre grains) have been given in two doses, at two or three hours distance betwixt each. The Chinese are well acquainted with the deleterious qualities of this nut, which they call *ma-tseen*; they have an idea, that nutmeg (*tow-kow*) has somehow the power of diminishing its poisonous nature; Loureiro observes, that he gave an infusion of the half toasted seeds in wine to a horse labouring under weakness of limbs, and that he died convulsed about four hours after

* See article Shevium, in vol. ii.

taking it; on the other hand he informs us, that the seeds burnt black may be safely administered, and are useful in fluor albus (see Flora Cochin-Chin., vol. i. p. 125.). In Magendie's "Formulaire," edited by Dr. Dunglison, will be found (p. 51.), the mode of preparing *strychnine*, as also formulæ for its administration in pills, tincture and mixture; we are there told, that the action of pure strychnine is like that of the alcoholic extract of nux vomica, but much more powerful, one eighth of a grain being sufficient to kill a large dog. The pills should be so prepared with conserve of roses, that each do not contain more than one twelfth, or one eighth of a grain; of the tincture from six to twenty-four drops may be given; it is made with an ounce of *alcohol*, and three grains of *strychnine*.

In the London Medical and Physical Journal, for Feb. 1826, p. 173, is detailed a case of epilepsy by Dr. *Bofferio*, in which strychnia was employed to the extent of one grain doses, but not with any lasting good effect. Mr. Stowe states, that poisoning with nux vomica, must be treated in the same manner as poisoning with henbane.*

See Article CLXXV. p. 327.

POTASS — *Potassa.*

℞ Aquæ cinnam. f℥iss., liquor potassæ subcarbon. ♏ xv.; spirit. æther. nitrici f℥ss., tincturæ opii ♏ xxv., syrup. simp. f℥i.; misce, fiat haustus, ter in die sumendus, in gravel. ℞ Aquæ potassæ f℥ss., aquæ liquor. calcis f℥vii.; misce, of this a

* For an account of the effect of nux vomica in producing a kind of catalepsy, also in preventing hydrophobia and arresting the progress of *lepra*, see Transactions of the Calcutta Medical Society, vol. i. p. 138.

table-spoonful may be taken twice or thrice in the day in a little chicken broth, in gravel. ℞ Potassæ subcarbonat. ℈i., rhæi gran. vi., pilulæ hydrarg. gran. iij., syrupi zingib. q. s.; fiant pilulæ vi., capiat unam bis in die, in gravel combined with hepatic derangement, to be repeated.

See Article CLXXXIII. p. 342.

Rhubarb — *Rheum.*

The tinctura rhæi et aloes (Edin.), and the tinctura rhæi et gentianæ (Edin.) are both excellent stomachic laxatives, and may be useful in cases of dyspepsia or flatulent colic, in doses of from f ʒi. to f ʒiv.; but if required to purge as far as f ʒvii. may be given. The pilulæ rhæi compositæ is perhaps the best of all the stomachic purges in cases of hypochondriasis or dyspepsia; the dose from grs. viii. to grs. xv. or xvi., twice daily.

℞	Rhub. pulv. - - -	grs. x.
	Pulv. rad. colomb. - -	grs. x.
	Pulv. aromatic. - -	grs. v.

Misce, fiat, pulv. hor. somni sumendus, to keep the bowels open in dyspepsia.

℞	Pulv. rhæi - - -	grs. xii.
	Pulv. jalap. - - -	grs. xii.
	Calomel. - - -	grs. v.
	Syrup. zingib. q. s.	

Fiant pilul. vi., four of which may be taken at going to bed, and the other two if required in the morning, to open the bowels freely, and carry off offending bile. ℞ Pulveris rhæi, pulveris myrrhæ āā grs. xv., aloes vulg. extracti grs. vii. extracti anthe-

midis ℈iss., syrup. zingib. q. s.; fiant pilul. xx., two or three to be taken an hour before dinner in dyspepsia accompanied with constipation. ℞ Pulveris rhæi gran. viii., magnesiæ carbonatis ℈ij., pulv. arom. gran. x.; misce, fiat pulv., to be taken for heartburn. ℞ Pulv. ipecac. grs. v., pulv. rhæi gran. x., syrup. croci q. s. fiant pilul. iv., one to be taken every three hours in dysentery; to this, if hepatic derangement is suspected, grs. iij. of the pilul. hydrarg. may be added, and the pills continued for some days, reducing the quantity of rhubarb if it purges too much.

A new chemical principle has lately been discovered by M. Pfaff in the common rhubarb, which appears to contain its active virtues; it is solid, dark-brown, opake, and has a disagreeable odour, and nauseous, bitter taste.

See Article CLXXXV. p. 349.

ROSEMARY — *Rosmarina herba* (Dub.).

I have observed under the head of rosemary (rosmarinus officinalis), that the physicians on the continent consider this plant as useful in glandular affections, and this appears to be confirmed by later experience; nay, the medicine would seem further to have obtained repute, also, in those complaints connected with atony of the nervous system, and spasmodic affections. Alibert * gave the essential oil of rosemary in doses of from two to four drops on sugar: the spirit may be given in doses from f℥i. to f℥iij., the powder from grs. xii. to ℈ij. I have observed, that the French believe this plant to have virtues in the glandular affections of children. It

* See "Elemens de Therapeutique," vol. ii. p. 128.

appears to have been the *ros* of Virgil (Georg. ii. v. 212.), Dioscorides l. 3. c. lxxxix. p. 209. says of it, " vi porro exalfactoria pollet et sanat morbum regium."

See Article CLXXXVI. p. 351.

RUE, COMMON — *Ruta.*

Dr. Thomson says, that he has found a strong infusion of the leaves, exhibited per anum, of great use in relieving the convulsions* of infants.

℞ Extract. rutæ graveol. gran. xii., aloes spicat. gran. vi., rhæi gran. viii., syrup. simp. q. s.; fiant pilul., vi. to be taken during the day in suppression of the menses. The oleum rutæ is given in hysteria as a stimulant and antispasmodic, in doses of from ♏iij. to ♏ vi. in syrup; the common dose of the extract is from grs. xii. to grs. xv. or ℈i. in pills.

See Article CXCII. p. 365.

SAL AMMONIAC — *Murias Ammoniæ.*

Dr. Paris informs us in his Pharmacologia, that a plaster prepared with ʒss. of the muriate, ʒi. of soap, and ij. of acetate of lead, is a valuable rubefaciant in pulmonic complaints. The aqua ammoniæ (Edin.) some think the best of all antacids (when well diluted) in heartburn, the dose from ♏vii. to ♏xv. in a large cup-full of tepid water. The spiritus mindereri. (aqua acetatis *ammoniæ* (Dub.), is, perhaps, the safest and most effectual diaphoretic, the dose from fʒiiss. to fʒxii. repeated every three or four

* Alston thought very highly of it in the same affections (Mat. Med. vol. ii. p. 213.). Boerhaave himself took it in great quantities: " Dolia ejus quotannis absumo" (vide Chem. ii. p. 77.).

hours. ℞ Aquæ acetat. ammon. fʒiij., aquæ fontanæ fʒix., potass. nitrat. gran. v., syrup. simp. ʒiss.; misce, fiat haust., to be given at bed-time, after proper evacuations have been procured, in ardent remittent fever; to this, tinctur. opii ♏xxv. may be added, if circumstances admit.

℞ Ammoniæ subcarbon.* (am. præp.)			℈ss.
Succ. limon.	-	-	ʒiiss.
Aquæ cinnam.	-	-	ʒi.
Syrupi zingib.	-	-	ʒiss.

Misce, fiat haustus. A useful draught in fevers; or fʒi. of the liquor. ammon.† subcarb. may be given occasionally in a little tepid gruel. The spiritus ammoniæ arom.‡, or spir. ammon. fœtid., in doses of fʒi., are useful in hysteric depressions or colic; or the spirit. ammon succin., in the dose of fʒss.

℞ Spir. ammon. succin.		-	fʒiiss.
Misturæ camphor.		-	fʒvii.
Tincturæ castor.	-	-	fʒi.
Syrup. simp.	-	-	fʒiij.

Fiat mistura, cujus capiat æger cochlearia duo, in an hysteric attack. The linimentum ammoniæ fortius (linimentum volatile (Edin.), is a most valuable external application, spread on flannel, in sore throat; or rubbed on the skin to relieve rheumatic pains; though it is often necessary to render it milder by the addition of a little olive oil: but I often found the soap liniment (lin. sapon. composit.) more useful in India in rheumatism.

* Sal volatilis salis ammoniaci of the old Pharmacopœias, also sal cornu cervi.

† Spir. salis ammoniaci, P. L. 1720 — 1745.

‡ Often called sal volatile.

See Article CXCVI. p. 373.

SALTPETRE, or NITRE — *Nitrum.*

℞	Potassæ nitratis	- -	ʒvii.
	Decocti hordei	- -	fʒxiv.
	Oxymellis simp.	- -	fʒiss.

Misce, fiat gargarisma, in inflammatory sore throat; or the trochischi nitratis potassæ (Edin.) may be used for the same purpose, one or two taken occasionally. ℞ Decocti avenæ Oij., potassæ nitratis ʒiss.; fiat potus; in ardent fever, after due evacuations have been procured; or it may be made with decoctum hordei Oij. ℞ Potassæ nitratis ʒiss., aquæ fontanæ fʒiv., mucil. gum. Arab. fʒij., vini antimoni ♏xl., syrup. aurant. fʒss.; misce, capiat fʒi., ter in die, in remittent fever, with a hot skin and teazing cough. ℞ Emuls. acaciæ Arab. fʒvi., potassæ nitrat. ℈iiss., aceti scillæ fʒv., spiritus menth. piper. fʒiss.; misce, fiat mistura, capiat æger fʒi., ter in die, in dropsical affections.

An old writer has said, that "it is not probable that a native saltpetre is any where to be found, whatever some authors may affirm;" but we now know that this is not the case; Brande* himself states, that "it is an abundant natural product." Certainly the ancients confounded it often with other substances; Hippocrates speaks of νιτρον, ερυθρον, λιτρον, &c.; Galen †, Pliny ‡, and Dioscorides §, all use various names for a certain saline substance, but

* Manual of Chemistry, vol. ii. p. 36
† Vide Simpl. l. 9. and 11.
‡ Pliny, lib. 31. c. 10.
§ L. 5. c. 130, 131.

which Geoffroy was at great pains to prove was altogether different from our nitre.

See Article CXCVII. p. 375.

SALT GLAUBER — *Sulphas Sodæ.*

This salt has of late years been almost entirely superseded by the sulphate of magnesia, which is every way preferable. The late Dr. Gregory of Edinburgh was of opinion, that the latter neutral salt possessed to a certain extent alterative powers, and I believe it. In small quantities of ʒij. to ʒiij., copiously diluted, it forms in India an excellent mineral water, useful in cutaneous affections, touching the parts, at the same time, twice daily with castor-oil. It never sickens the stomach, nor interferes with diet of any kind; on the contrary, I have found it to increase the appetite, taken in this way an hour before breakfast. Glauber salt would appear to have been known to the Chinese (who call it *Taousze*), since the year 702, and is mentioned by several of their medical writers.*

See Article CC. p. 380.

SARCOCOLLA — *Sarcocalla.*

At p. 381 I have observed, that Mesue said of it, "purgat pituitam crudam;" but he also stated, "ventriculo bilioso est nocutissima, sarcocolla, et ob "id vitanda pichrocolis est;" that Arabian physician

* Mr. Morrison, in his Chinese Dictionary, informs us, that four of the most distinguished Chinese medical writers were *Chung-king-chang-ke*, *Show-chin-lew-yuen-soo*, *Tung-yuen-le-gae*, and *Tan-ke-choo-chin-heang*.

gave sarcocol in substance to the extent of ʒij. (Mesue, Simpl. l. ii. c. xviii. p. 69.), Shroder not more than ʒi.

See Article CCI. p. 381.

SARSAPARILLA, Substitute for — *Periploca Indica.*

I have noticed at p. 382, the nature and mode of using this root. The true sarsaparilla of America, was at one time thought to possess powerful antisyphilitic virtues, but is now merely considered as useful in rendering a mercurial course more efficacious. Paris observes, that it is rarely boiled enough; Dr. Thomson on the other hand thinks long boiling injures it; Mr. Brande is of opinion, that the virtue does not reside exclusively in the cortical part; but is to be sought for in the amylaceous covering of the woody fibre, only to be dissolved by due boiling (Brande's Manual of Pharmacy, p. 380.). Geoffroy, gave it to the quantity of from ʒss. to ʒij. in substance, and in decoction to fʒss. (Geof. ii. p. 135.), in venereal affections. The reader will find much curious information regarding sarsaparilla, in some of the old authors *de Morbo* Gallico, such as *Cardanus, Claudianus*, Massa, &c. The preparations in modern use, are: the decoctum sarsaparillæ, of which fʒiv. may be taken thrice daily; the decoctum sars. compos., of which the same quantity may be ordered. Much of the good effects of this last preparation I consider is owing to the guaiac. root which it contains; a medicine perhaps not sufficiently appreciated, nor is the gum resin itself. The following is the old decoctum lusitanicum, and which was, some years ago, supposed to possess valuable alterative virtues: ℞ Radicis sarsaparillæ, ligni sassafrasencis,

ligni guaiaci rasi, singulorum f℥iss., radicis mezerei, seminum coriandri, āā f℥ss., aquæ distillatæ O. x., coque ad octorios quinque; of this a pint is to be taken daily.

See Article CCIV.

SCAMMONY — *Scammonia.*

I have observed, that some of the old Arabian writers said much against this medicine, but no one has expressed himself so decidedly in opposition to it as a writer of a much later age, Hoffman: "Ego nunquam in praxi mea in usu habui, nec in posterum habebo; me semper ab ejusmodi venenis colliquativis abstinens:" Hoffman in Shrod. p. 573. Alston observes candidly, I reckon scammony milder than the resina jalapæ (Mat. Med. vol. ii. p. 469.).

℞ Scammoniæ gran. vi., pulv. jalapæ gran. xv., ammoniæ subcarbonat. gran. vi.; tere ut fiat pulvis, for a purge. ℞ Aloes spicat. gran. xxx., scammoniæ gran. xxx., terebinth. com., q. s.; fiant pilulæ xv., one in general is sufficent to keep the bowels open, taken at bed-time. ℞ Pulv. scammoniæ composit. gran. xii., pulv. rhæi gran. vi., hydrargyr. submuriat. gran. iij., syrup zingib. q. s.; ut fiant pilulæ v., for a dose, to purge off bile, or bring away ascarides.

See Article CCV. p. 389.

SENNA — *Senna.*

℞	Infusi sennæ - - -	f℥i.
	Tincturæ jalap. - -	f℥i.
	Magnesiæ sulphat. - -	℥ss.
	Syrupi zingib. - - -	f℥i.

Fiat haustus; a strong purge, at the beginning of inflammatory fever.

Senna is one of our most efficacious purges; two drachms, when infused during the whole night in eight or ten ounces of boiling water, are as powerful as thrice that quantity when infused but for one hour: to this two drachms of manna may be added before taken, to prevent griping. The electuarium sennæ composit., by itself, is a good aperient, in doses of from ʒi. to ʒv.; if a little powdered jalap, say eight or ten grains, are added to it, it is a powerful purgative.

I have not been able to learn, that any of the Greek writers previous to Actuarius notice senna; he was properly speaking a Jew physician, but wrote in Greek, and practised in Constantinople in the 13th century; but the medicine had been particularly treated of by the Arabian writers, upwards of 300 years before his time; first by Mesue, who died in A.D. 865, and afterwards by Serapio, who flourished in A.D. 890.

See Article CCIX. p. 395.

SODA, CARBONATE OF — *Carbonate of Soda.*

℞ Extract. anthemid. ʒi., sodæ carbon. ʒss., pulv. rhæi ϑi., olei carui ♏x., syrup. zingib. q. s.; fiant pilul. xxiv.; two to be taken thrice daily in dyspepsia: or this: ℞ Sodæ subcarbon. ϑiv., radicis rhæi contus. ʒiiss., corticis cascaril. contus. ʒi., aquæ ferventis f℥xii.; macera per horas tres, dein cola, capiat æger f℥i. bis in die. ℞ Sodæ subcarbon., myrrhæ optimæ āā gran. iv., ferri sulphat. gran. ij.; fiant pilulæ duæ, ter in die sumend. (*Hooper*), in scrophula: in that complaint in India, I have found greater advantage from preparations of iron, and sea-bathing, than any other medicine. The best pre-

paration is the sub-carbonas ferri, in doses of from vii. to xxx. grains twice or thrice daily, in the form of a bolus, with bark and aromatics.

Much has lately been said and written on the subject of iodine, which was discovered in 1813, by M. *Courtois*, in the mother-waters of soda, as it is obtained from sea-weed *; it was first used in medicine by *Coindet*, a physician of Geneva, in goitre; and, it would appear, with the happiest effects; but I presume, from what I myself saw of that disease, during a long residence in Switzerland, that although it may for a time be checked by the use of soda, no lasting cure is ever performed, if the sufferer remains within the influence of the endemic cause. Iodine has also been considered useful in white swellings, scrofula, and amenorrhœa, to destroy any disposition to scrofulous phthisis, and to hasten the cicatrization of venereal ulcers! A tincture has been given to the extent of ten drops three times a day, in a little sugared water, increasing the dose to twenty drops. This tincture is prepared with one ounce of alcohol and forty-eight grains of iodine. It would appear, that an ointment is also now employed made with twenty-nine grains of the hydriodate of potash, and ʒiss. of hog's-lard: of this the quantity of ʒss. may be rubbed in, morning and evening, on the bronchocele, at the end of eight days increasing it to ʒi. See Magendie's Formulaire, p. 39.

* It has been got from a great variety of sea-plants, such as the Fucus saccharinus, F. digitatus, F. serratus, &c.; and from sponge by Dr. Fyfe and Mr. Straube, of Hofwyl. See Magendie's Formulaire, edited by Dunglison, p. 22.

See Article CCXIII. p. 402.

SQUILL — *Scilla.*

℞ Aceti scillæ *	- - -	f ʒi.
Decocti hordei	- - -	f ℥v.
Syrupi croci	- - -	f ℥i.

Misce, fiat mistura. A table-spoonful to be taken three or four times in the day, when cough is troublesome.

℞ Syrupi papaveris f ʒvi., oxymellis scillæ f ʒiij., decocti hordei f ℥vi.; misce, capiat cochlear. duo magna, ter in die; in simple catarrh, proper evacuations having preceded. The compound squill pill is an excellent expectorant, in doses of from grs iij. to grs. xii.; it may be combined with ipecac., or, when water may be suspected to be forming in the chest, with the blue pill or calomel. ℞ Pilulæ scillæ composit. ℈ij., pulv. ipecac. gran. iv., pilul. hydrarg. gran. xii., vel hydrargyr. submur. gran. iv., syrup. zingib. q. s.; fiant pilulæ xviii., two to be taken at night and one in the morning. ℞ Pulv. scillæ gran. xii., pulv. ipecac. gran. xii., extract. tyraxaci ℈iij., pilul. hydrarg. gran. x., syrup. simp. q. s.; fiant xxiv., capiat duo, mane et vespere, in dropsy. Mr. Brande tells us, that obstinate hoarseness is sometimes removed, by thirty drops of the tincture of squills, taken night and morning, in a little water. The Romans used both the oxymel and acetum

* The acetum scillæ may be seen very highly spoken of, in consumptive cases, in an old book, *attributed* to Galen! viz. "De Medicamentis, facile parandis;" of it is said in that work, "Item phthisicos ab omnibus deploratos hoc medicamento sanitati restituos novimus." I believe it to be a very valuable expectorant, and have found it so in India.

scillæ (scillinum); the last they thought had virtues in epilepsy: with the first they prepared a warm gargle, which they ordered in quinsey (see Pliny, Nat. Hist. book xxiii. chap. ii.).

℞ Pulv. scillæ exsiccat. gran. ii., pulv. fol. digital. grs. ii., pilulæ hydrarg. gran. iiss.; fiant pilulæ duæ, hora somni sumendæ, in incipient hydrothorax; if rest is required, to this may be added, extract. lactucæ grs. v. to vi.

See Article CCXVIII. p. 411.

SULPHUR — *Sulphur.*

Before proceeding further, I must here rectify a mistake, made by my amanuensis, at page 413. In speaking of sulphur, it is there said, that Dr. Thomson cautions us against the *exhaustion* which sulphur is so apt to induce; this, he does not say of sulphur, but of a very different medicine, *supertartras potassæ.*

℞ Sulphur. sublimat.	- -	℥ss.
Potassæ supertart.	- -	ʒiss.
Electuar. sennæ compos.	-	℥i.
Syrup. simp. q. s.		

Misce, fiat electuarium; of this a tea-spoonful may be taken at bed-time for the piles.

℞ Sulphur. sublim.	- -	ʒij.
Potassæ sulph.	- - -	ʒiv.
Electuar. sennæ compos.	-	℥ij.
Syrup. simp. q. s.		

Fiat electuarium, capiat æger singulis noctibus cochleare minutum, for the piles; bathing the parts frequently at the same time with water made cold by means of salt-petre, in India.

℞ Sulph. sublim. - - - ʒiss.
Sacchari non purific.,
Supertart. potassæ, āā - - ʒij.

Misce, fiat pulvis, bis in die sumend., in scabies, the itch, impetigo, or blotched face.

℞ Sulphur. loti - - ℈ij. — ℈iiss.
Sodæ subcarbon. - gran. xxx.
Pulv. antim. gran. iss. — gran. ij.

Misce, fiat pulv., bis in die sumend., in cutaneous* impurity, consequent of unchecked cardialgia, which it often is, in India.

℞ Sulphur. sublim. - - ʒiij.
Adipis præpar. - - - ℥ij.

Misce, fiat unguentum; to be rubbed on the affected parts every night at bed-time, in the itch.†

See Article CCXXX. p. 442.

Thorn Apple — *Datura.*‡

It would appear that M. Brande had succeeded in procuring an alkaline principle from the seeds of the *datura stramonium*, as well as from the *hyoscyamus niger*. Magendie regrets, however, that that

* For such affections, Dr. Thomson says, that he considers the solution of potass, (liquor potassæ, Lond.), almost a perfect specific, given in doses of from ♏x. to f℥ij. in some bitter infusion.

† The hydro-sulphuretum ammoniæ (Dub.) is a medicine I have no experience of in India; it is said to be powerfully sedative, lowering the action of the heart and arteries. Mr. Cruikshank ordered it in small doses of ♏v. or ♏vi., three or four times in the day, in a large tumbler of water.

‡ In the Transactions of the Medical and Physical Society of Calcutta, p. 121, will be found an account of the successful use of a decoction of the datura fast., in spasmodic asthma; ℥i. of the bark, to lb. iss. of water, boiled to lb. i.; dose ℥ij.

gentleman has given us but an imperfect account of these substances, and thinks the experiments merit repetition; an accurate analysis of the seed just mentioned will be found at page 121 of Dr. Dunglison's edition of Magendie's "Formulaire." Dr. Marcet, I perceive, by the Med. Chir. Trans. vol. vii. p. 551, gave great relief in sciatica by prescribing the extract of the seeds of the *datura stram.*, in doses of from one-eighth of a grain to one grain. In cases of poisoning with the datura, Mr. W. Stowe recommends the same treatment as that ordered for poisoning with henbane, opium, and camphor.*

See Article CCXXXV. p. 457.

TURPENTINE — *Terebinthina.*

As an application for burns, the value of the liniментum terebinthinæ (Lond.) is well established; it was first recommended by Dr. Kentish, and Dr. Wilson gives his evidence to its good effects. Dr. Kentish began by bathing the burnt parts with warm oil of turpentine, and then dressed them with plasters of the liniment. The use of the emplastrum picis compositum (Lond.), and the tar ointment (unguentum picis liquidæ), are too well known to require particular notice here. I have found the latter of great use in the tinea capitis, in India, a most obstinate disease.

See Article CCXXXVII. p. 461.

ACETUM — *Vinegar.*

Vinegar is one of our best and safest acids, and is

* Dr. Adam seems to prefer a tincture of the datura fastuosa, given in asthma. The capsules, seeds, and leaves; the quantity of spirit, the same as for tinct. digitalis; dose, 30 or 40 drops, repeated every two hours. See work last quoted, p. 370.

much used, both externally and internally by all descriptions of medical men, in India; next to it, as an internal medicine in that country, may be ranked the tamarind pulp; on the other hand, lime-juice, and that of oranges, or pumplemoses, not quite ripe, are hostile to many stomachs, and apt to bring on cholera morbus. A tea-spoonful of vinegar is an admirable adjunct to tepid drinks, such as barley-water or rice-gruel, when perspiration is required to be brought on in inflammatory fever; cloths dipped in it and water, are a good application in sprains and bruises; or a cataplasm may be made with vinegar mixed with linseed-meal; it forms a good collyrium with a little brandy and rose-water. ℞ Aceti f℥ij., spiritus tenuioris f℥i., aquæ rosæ f℥xv.; fiat collyrium. The following I have found to be a useful embrocation in pains and bruises, when the skin remains entire: ℞ Ammoniæ preparatæ ℥ij., aceti Oiij., spiritus tenuioris Oiiss.; misce. The acidum acetosum aromaticum (aromatic vinegar) is an agreeable perfume, and is considered as antifebrile, taken in doses of f℥ss. in barley-water. With vinegar, boiled with honey, may be prepared an excellent gargle, in inflammation of the throat. Dr. Pearson gives us this useful caution in his Practical Synopsis of the Materia Medica (p. 327.): "When vinegar is employed to fumigate sick rooms it should be boiled in glazed earthen pipkins, and carried about the bed, and not thrown on hot bricks, by which means it is decomposed." The ancients thought very highly of vinegar: Pliny tells us (Nat. History, book xxiii. chap. i.), that an oxycrate made with it is an excellent remedy in burns, scaldings, and various *cutaneous affections!*

See Article I. chapter ii. page 495.

ANTIMONY — *Antimonium.*

℞ Pulveris antimonialis - grs. v.
Potassæ nitratis - - grs. vi.

Misce, fiat pulvis, hora somni sumendus; as a sudorific, in inflammatory fever.

℞ Calomel - - - grs. iv.
Pulv. antimon. - - grs. viii.
Pulv. rhæi - - - grs. vii.
Syrup. simp. q. s.

Misce, ut fiant pilulæ v., one to be taken every two hours, at the commencement of ardent remittent fever in India. The mode of giving the antimonial wine has already been mentioned. The precipitated sulphuret of antimony was long considered a very useful medicine; of late years it is not so much trusted to, except when combined with mercury, and then it is prescribed with advantage in venereal cuticular impurities, given at the same time with sarsaparilla.

℞ Sulphur. antim. præcip. - grs. iij.
Pilulæ hydrargyr. - - grs. iij.
Extract. lactucæ - - grs. iij.

Fiant pilulæ iii., two to be taken at night and one in the morning, and continued for some time, in anomalous venereal affections. Of a somewhat similar nature to this are the pilulæ hydrargyri submuriatis compositæ (Lond.), commonly called Plummer's pill, so frequently now ordered by Mr. Abernethy in secondary syphilis; the dose from grs. iv. to grs. xii., twice daily. The ointment used for raising a local

pustular eruption on the skin, is prepared by rubbing together ʒij. of tartarized antimony and ʒi. of hog's-lard.

For poisoning with antimony, I find recommended by Mr. W. Stowe, after vomiting and diluting well with large draughts of bland fluids, that decoctions of astringent vegetables should be drank freely.

See Article II. chap. ii. p. 498.

ARSENIC — *Arsenicum.*

If to be given in substance as a tonic, Dr. Thomson thinks the best mode is by rubbing one grain of the white oxide with ten of sugar, and then beating the mixture with a sufficient quantity of crumb of bread, and making the whole into ten pills, one of which is a dose. I have noticed the use of the white oxide of arsenic in cancerous cases, sprinkled over the face of the sore. Much valuable information is to be found on the subject of arsenic in cancer, in *Justamond's* Treatise on Cancerous Affections, and still more in Le Febure's work (Remede pour Guerir le Cancer), published in 1775. Fowler's solution is made by boiling thirty-two grains of white arsenic, reduced to powder, and an equal quantity of subcarbonate of potass, in four ounces of water; adding to the solution, when cold, four ounces more of water and two drachms of spirit of lavender: this has been given to children in hooping-cough, in the quantity of from two to six drops; to adults, in doses of from ten to fifteen, three times in the day. What was called Jacobi's solution, was somewhat different from this, and rather weaker. Many able men have written on the use of arsenic: *Friccius, Moliter, Duncan, Bradsley, Simmons,* &c. While some are

lavish in its praises, others, such as *Monro*, *Baker*, and *De Haen*, have condemned it, in consideration of its poisonous* nature. Pliny† notices three kinds of arsenic, and he died in A. D. 79; so does Avicenna‡, who died A. D. 1036. The first considered this mineral merely as a cautery; and, in the days of the latter (for the Arabs borrowed nearly all from the Greeks), I presume, it was not much more prized. In cases of poisoning from arsenic, Mr. W. Stowe recommends vomiting to be excited or encouraged by large draughts of linseed tea; and, if the arsenic has been taken in solution, he advises lime water to be drank freely. Inflammatory symptoms to be combated by bleeding, fomentations, emollient glysters, &c., as circumstances may require. He concludes by saying, "no specific antidote yet known." See Toxicological Chart. In my paper on the lepra Arabum, in the Transactions of the Royal Asiatic Society (vol. i. part ii.), I have noticed that the Hindoos§ had used arsenic for this disease (kustha) for ages past; and in vol. ii. of the Asiatic Researches will be found a native formula for its administration, first made known to the world by Sir W. Jones.

* See Pearson's Practical Synopsis of Materia Medica, p. 400.
† Nat. History, book xxxiv. chap. xviii.
‡ Lib. ii. tract 2. c. 49. p. 102.
§ See an admirable paper in the Transactions of the Medical and Physical Society of Calcutta, on the *kushta*, or leprosy of the Hindoos, by the vice-president, Horace Hayman Wilson, Esq., vol. i. p. 1. It is replete with oriental lore, and brings forward several curious formulæ from some of the early Hindoo writers, such as *Charaka* and *Susruta*, in which arsenic appears to have been prescribed for lepra.

See Article VI. chap. ii. p. 504.

Copper — *Cuprum.*

At page 511., I have mentioned the dose of sulphate of copper, when ordered as an emetic; in very small doses it has been given, as a tonic, in epilepsy. Brande has the following formula:

℞ Cupri sulphatis - - gran. iij.
Medullæ panis - - ʒi.

Fiat massa in pilulas xxiv. dividenda, quarum capiat æger unam ter in die.

Of the virtues of cuprum ammoniatum in epilepsy, I can speak from experience, in India; I ordered the following:

℞ Cupri ammoniat. - - gran. i.
Confect. aromatic. - - gran. xv.

Fiat bolus, bis in die sumendus; at the same time with sea-bathing.

℞ Cupri sulphat. - - gran. ij.
Extract. cascarillæ resinor. gran. xvii.
Opii - - - - gran. ij.
Syrup. zingib. q. s.

Ut fiant pilulæ viii., one to be taken three times in the day; in epilepsy.

In cases of poisoning from copper, "large draughts of milk and water are to be taken to encourage vomiting; whites of eggs to be stirred up with water and drank freely. Inflammatory symptoms to be subdued on general principles, and the nervous affections to be relieved by anodynes and antispasmodics." Such is the treatment recommended by Mr. Stowe, in his Toxicological Chart; he further states,

that sugar is not a specific antidote in such cases, as Orfila *at first* promulgated.

See Article X. chap. ii. p. 522.

IRON — *Ferrum.*

℞ Ferri sulphatis - - gran. iij.
Pulveris rhæi,
Pulveris aromat. āā - gran. iij.

Misce, fiat pulv., bis in die sumendus; in general debility.

℞ Ferri ammoniat. - - grs. v.
Pulv. cinnamom. compos. grs. xii.

Misce, fiat bolus, bis in die sumend.; in scrophula or chlorosis.

℞ Tincturæ ferri muriat. - f℥ss.
Spiritus cinnamom. - - f℥iss.

Misce. Capiat æger cochleare parvulum unum, vel alterum bis in die, ex cyatho aquæ fontanæ; in scrophula.

The tinctura muriatis ferri is a powerful antispasmodic*, in cases of dysury, given in the quantity of six or eight drops every quarter of an hour till it sickens. I have employed it often in India, in such cases, with the happiest effect.

℞ Ferri rubig. - - gran. viii.
Pulv. zingiber.
Pulv. rhæi, āā - - gran. iij.
Confect. rosæ gallicæ q. s.

Ut fiat bolus, bis in die sumendus; in amenorrhœa.

* Dr. F. Hamilton found the medical men of Barar ordering a preparation of iron, *sahasrang* (Hind.), *lohachasma* (Sans.), in hooping cough. MSS.

The rust of iron.—Mr. Brande says that this preparation of iron, the rubigo ferri (ferri subcarbonas), has lately been recommended in the treatment of the tic douloureux; and in cancer Dr. Thomson has found it to suspend the symptoms of that dreadful malady.*

See Article XIV. chap. ii. p. 532.

LEAD† — *Plumbum.*

℞ Liquoris plumbi acetatis - ♏xviii.
Aquæ distillatæ - - f℥viii.

Misce, fiat collyrium; for inflammation of the eyes, the bowels being previously well purged. Vel,

℞ Liquor. plumbi acetat.
Tincturæ opii, āā - - ʒij.
Aquæ rosæ - - - f℥xvi.

Misce, fiat collyrium; in ophthalmia.

℞ Plumbi acetatis,
Opii, āā - - - - gr. ss.
Confec. rosæ gallicæ q. s.

Fiat bolus, bis in die sumendus; in spitting of blood.

The ceratum plumbi acetatis is a valuable application for burns and scalds.

℞ Liquoris plumbi acetatis - ʒiss.
Spiritus tenuioris - - f℥iss.
Aquæ distillatæ - - Oiss.

Misce, fiat lotio; for incipient phlegmon; or to this

* Englehart, of Gottingen, has lately, by a series of experiments, ascertained, that the red colour of the cruor of the blood is owing to the iron it contains; having deprived a portion of cruor of its iron, by means of chlorine, it became colourless.

† Dr. F. Hamilton found a preparation of lead, *siskang* (Hind.), mixed with honey, ordered by the medical men of *Barar* for difficult menstruation and gonorrhœa. MSS.

three or four fluid drachms of the acetic acid may be added, to render it still more discutient.

For poisoning with lead, Mr. Stowe recommends a weak solution of Glauber's salt to be drank plentifully. Dr. Thomson seems to prefer castor-oil, combined with henbane, plentiful dilution with mucilaginous fluids, the warm bath, and mutton broth injections.

See Article XIX. chap. ii. p. 540.

MERCURY — *Hydrargyrum.*

℞ Pilulæ hydrarg.	-	gran. v. vel vi.
Pulv. ipecac.	-	gran. ij.
Camphoræ -	-	gran. iss.
Syrup. zingib. q. s.		

Misce, ut fiant pilulæ duæ; one to be taken morning and evening, in hepatitis or syphilis, and to be continued till the mouth is affected; these seldom purge, but keep the bowels gently open.

℞ Hydrargyr. submuriat.				-	℈ij.
Camphoræ, āā	-	-	-		℈i.
Opii -	-	-	-	-	grs. viii.
Syrupi simpl. q. s.					

Misce, ut fiant pilul. xl.; one to be taken three times in the day, in syphilis; and continued till the mouth is affected; avoiding fruit, wine, and all vegetables, excepting mealy potatoes.

℞ Pilulæ hydrarg.	-	-	gran. iv.
Pilulæ scillæ comp.		-	gran. vi.
Pulv. ipecac.	-	-	gran. ij.
Syrup. zingib. q. s.			

Fiant pilul. tres, in die sumendæ; in hepatic obstruction, threatening dropsy.

℞ Hydrarg. oxymuriat. - grs. iv.
Ammoniæ muriat. - grs. viii.
Spiritus vinos. tenuior. - f℥ij.

Solve; of this a tea-spoonful may be given twice daily in rice gruel, in confirmed constitutional syphilis.

℞ Hydrarg. submuriat. - - ℈ij.
Sulph. antimon. præcip. - ʒi.
Guaiac. resinæ - - - ʒij.
Bals. copaib. q. s.

Ut fiant pilul. lx., capiat æger tres, singulis noctibus; in venereal herpes; to be continued till the mouth is touched, using at the same time frequent tepid baths.

℞ Hydrarg. submur. - gran. iv.
Pulv. jalap - - - gran. xv.
Extract. colocyn. - - gran. vi.

Fiant pilulæ v.; to be taken early in the morning at the beginning of fever, or to carry off offending bile.

℞ Pilulæ hydrarg.
Pulv. antimon. āā - gran. iiss.
Opii - - - - gr. ss.
Syrup zingib. q. s.

Fiat pilula, hora somni sumenda; in venereal blotches, attended with weakness and diarrhœa.

The hydrargyri nitrico-oxydum (or red precipitate) is much used for the purpose of sprinkling over chancres to clean them; an ointment is prepared with it for similar purposes, and which also is often employed for inflammation of the tunica conjunctiva. When properly diluted, the unguent.

nitrat. hydrargyri is resorted to for some of those inveterate cutaneous affections, often met with in India. The weaker sort (the unguent. nit. hydrarg. mitius, Edin.) is considered, when moderately diluted with lard, as a specific in psoropthalmia, and in the purulent opthalmia of infants. The unguentum hydrarg. præcipitat. albi, is a common application for *ching-carpan*, or obstinate itch of infants, in India; though it is a safer practice, perhaps, not to repel such complaints by mercurials, but to moisten the parts with castor oil twice daily, and attend to the state of the first passages, correcting acidity, by frequent gentle doses of magnesia and rhubarb. The common mercurial ointment, rubbed in to the quantity of ʒss., morning and evening, at the same time that the medicine is administered internally, is a treatment usually adopted in India, when it becomes an object to affect the mouth quickly; or double that quantity may be rubbed in, should the bowels be too weak to admit of the remedy being given internally, which is often the case in dysentery. Mercury, in India, provided there is sufficient reaction in the frame at the period of its being administered, is the most powerful and most useful of all medicines; and, in judicious hands, either cures, or gives a salutary check to many of the diseases to which Europeans are subject. But in all cases in which a solution of continuity is approaching, or putrescency threatens, it is decidedly contra-indicated: if given, for example, at the commencement of hepatitis, it will prevent suppuration; but if suppuration has taken place, mercury will retard the cure. In the advanced stages of typhus fever, it hastens death: had it been prescribed skilfully during the first days

of indisposition, the malady, perhaps, might never have assumed the typhoid type; so with dropsical affections; calomel, or the blue pill, will do much on such occasions, if resorted to in time, but if administered when the powers of assimilation are gone, it will certainly disappoint.

I can recognize in mercury no sedative property whatever, however great the dose; it may, indeed, act by weight, and so be hurried through the stomach, little changed and nearly inert; but its essential nature must still be the same. Might we not as well be told, that three or four glasses of brandy, if drank, will inebriate, but that a whole bottle will not have the same effect? Mercury I conceive to be the most universal stimulant and alterative* in the whole range of the Materia Medica, and as such seldom fails to do good where it is clearly indicated. Although the most valuable, yet is it also the most capricious! I knew an individual who had his mouth violently affected by three grains of calomel, taken for two nights following; yet a year afterwards, he took it for several weeks, without its producing a similar result. A fact which afforded me a salutary lesson through after-life, that this mineral ought to be dealt with *charily*. Children may take larger doses of calomel with impunity than grown up people, owing to the abundant mucus with which their intestines are lined; and those who are what is termed nervous†, men or women, will suffer infinitely more from the irritating influence of mercury, than those who are not. Mr.

* It is an old fashioned word, it is true; but where we cannot exactly explain the *modus operandi*, I know none more expressive.

† In such habits, it not unfrequently produces vertigo, tremour, and palpitation.

J. Annesly, Dr. A. Cartwright, and several others, have strongly and ingeniously advocated the use of scruple doses of calomel; and they are right, if they have found benefit from that practice. I have had no reason to complain of frequently repeated small doses, by which means I found the weapon more within my own control. Five or six grains of calomel given at bed-time, will in all probability purge the patient towards morning; and if we administer it with that view, it is all well; but if given to produce a change in the habit, it is, I humbly conceive, a better plan, to order the same quantity divided into three distinct doses, to be taken during the day; as in this way, it is much less apt to run off by stool, from the stomach being kept in a continual state of excitement, by the repeated application of the stimulant; in the same manner, perhaps, as dysentery is relieved by nauseating doses of ipecacuanha, given at short intervals. With regard to the MODUS OPERANDI of mercury, I have already said much under the article Mercury, at p. 540; so shall here briefly observe, that till such time as a certain degree of soreness of the mouth takes place, I have seldom seen any very lasting advantage derived from its use, whether in syphilis, acute rheumatism, remittent fever, hepatitis*, or dysentery; on the contrary, I have but too often found symptoms rendered worse; but the very day, nay, I will go farther, the very hour when the mouth becomes affected, I have invariably remarked, that the disease assumes a more favourable aspect; and this peculiarity is so forcibly impressed on my mind, that I should almost be inclined to look upon

* See Dr. James Johnson's valuable Medico-Chirurgical Review for April 1826, p. 336.

a slight degree of ptyalism, under the circumstances we alluded to, as a friendly notice from Dame Nature herself, that we had gained the wished-for goal. I shall ever remember one very marked instance, in the case of a poor fellow, a private of his Majesty's 74th regiment, who was in so miserable a state from dysentery, that I expected every hour to be his last; I had quitted him late the preceding evening, when his motions were so frequent, and tenesmus so distressing, that he required the almost constant use of the bed-pan; but what was my surprise in the morning, to find him sitting up in bed; and on being asked how many motions he had during the night, to hear him reply, "Oh! none since midnight; but I have got a much worse complaint, so sore a mouth, that I can scarcely speak;" he had been for two days rubbing in ʒij. of strong mercurial ointment morning and evening, and which fortunately had the effect I so much desired, just in time to save him; the medicine had exerted its *alterative* powers; a transfer of humours had been brought about to a distant part, and the bowels had in consequence been relieved by the change!

To conclude; when I have spoken of mercury, I meant mercury in all or any of the forms in which it is commonly administered. Calomel, by being a valuable purge, is, no doubt, peculiarly useful in many cases; and, by its at the same time stimulating the liver and biliary ducts, an increased secretion of bile must naturally ensue from its being employed; but I humbly conceive, whatever may have been, certainly very ably, said by Mr. Annesly* respecting

* See his excellent observations on the use and abuse of calomel, in the first volume (p. 211.) of the Transactions of the Medical Society of Calcutta.

the mechanical and chemical operation of calomel, that the happiest influence of that preparation must be by its effect on the general habit, *simply as mercury;* thereby changing for a time the nature of many of the secretions, rendering them evidently more fluent, and, consequently, removing organic congestion, dark viscid bile, &c. And, perhaps, the best of all proofs, in support of what I have here with much diffidence advanced, is our contemplating the extraordinary relief often given in cases of hepatitis, syphilis, acute rheumatism, and, most of all, in dysentery, *when no calomel had been given at all,* but the mercury rubbed in, in the form of an unguent.

See Article XX. chap. ii. p. 562.

SILVER — *Argentum.*

The nitrate of silver is chiefly employed as a caustic, but of late years it has been found to be useful taken internally as a tonic and antispasmodic, and to be especially indicated in epilepsy (Med. Chir. Trans. vol. ix. p. 234.) and chorea; but Dr. A. T. Thomson is of opinion, that little advantage is gained by it, unless it is preceded by a course of purgatives.

℞ Argenti nitrati - - gran. i.
Confectionis rosæ - - gran. x.
Fiant pilulæ sex, sumat æger unam ter in die.

I have been informed, that the following prescription of Dr. Thomas's, has been given with the best effects in epilepsy. ℞ Argenti nitratis grs. iij.; solve terendo in aquæ distillatæ ℥ aliquot, et adde

micæ panis q. s.; fiat massa in pilulas viginti distribuenda; sumat æger unam vel duas bis terve in die.

See Article XXI. chap. ii. p. 568.

TIN * — *Stannum.*

Tin is now known to have no medicinal property, beyond its mechanical effect in expelling worms; and, in that respect, I believe it to be far inferior to either the root of the pomegranate tree or oil of turpentine.

℞ Limatur. stanni,
Confection. cassiæ, āā - - ʒi.

Misce, fiat electuarium, capiat æger magnitud. nucis moschatæ bis in die; this may be continued for three or four days, after which, a purge of the compound powder of scammony and rhubarb, or of calomel and rhubarb, may be taken to bring away the worm or worms.

℞ Pulv. scammoniæ composit. (Lond.) gran. xii.
Pulv. rhæi - - - - gran. xii.
Misce, fiat pulv.

℞ Pulv. rhæi - - - gran. xii.
Calomel - - - gran. v.
Misce, fiat pulvis.

* Dr. F. Hamilton found a preparation of tin, called *tapasrak* (Hind.), *bangga* (Sans.), ordered by the *Vytians* of Bahar to be given in milk, for gonorrhœa.

See Article XXII. p. 573.

ZINC — *Zincum.*

℞ Zinci sulphat.
Plumbi superacetat., āā - gran. iv.
Aquæ distillat. - - f℥iv.

Misce, fiat collyrium; in ophthalmia, after bleeding with leeches and purging: or an eye wash may be prepared with gr. i. of the sulphate of zinc and ℥ij. or ℥iiss. of rose-water.

℞ Zinc. sulphat. - - gran. vi.
Aquæ rosæ - - - f℥v.
Misturæ camphor. - - f℥ij.

Misce, fiat collyrium.

℞ Zinc. sulphat. - - - ℈ij.
Aquæ rosæ - - - ℥viii.

Misce, fiat injectio; in gonorrhœa, should brisk purging and low diet have preceded.

℞ Zinci sulph. - - - gr. ¼.
Decoct. cort. cascarillæ - f℥iij.
Syrup. simplic. - - f℥i.

Misce, fiat haustus, ter in die sumendus; in hooping cough.

℞ Zinci oxydi - - - gran. v.
Extract. cascarillæ - - gran. vi.
Syrupi zingib. q. s.

Fiant pilulæ tres, ter in die sumendæ; in epilepsy.

℞ Zinci sulphat. - - gran. i.
Extract. gentianæ - gran. viij.
Syrup. zingib. q. s.

Fiant pilulæ duæ; in die sumendæ, cum f℥ij. infusi anthemidis; in epilepsy.

To produce vomiting, the sulphate of zinc has been given to the extent of ʒss., but from grs. x. to grs. xv. or ϑi. will generally excite it.

℞ Zinc. sulphat. - - - ϑi.
Misturæ camphor,
Aquæ rosæ, āā - - - fʒviij.
Misce, fiat collyrium.

℞ Zinci sulphat. - - gran. xvi.
Unguenti adipis præpar. - ʒi.
Misce, fiat unguentum; to smear the edges of the eye-lids, in cases of venereal ophthalmia.

END OF THE FIRST VOLUME.

LONDON:
Printed by A. & R. Spottiswoode,
New-Street-Square.

Digitized with financial assistance from
Dr. Gersan Da Cunha
on 19 February, 2019